

RADIO-PERCEPTION

THE JOURNAL OF THE
BRITISH SOCIETY OF DOWSERS

Vol. XI No. 80



JUNE, 1953

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JOURNAL OF THE BRITISH SOCIETY OF DOWSERS

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NOTICES

Overseas members are earnestly requested *not* to send remittances by foreign cheques, as discount has to be paid on them and there is considerable delay in getting them cashed.

Payments should be made by English cheques or by money order, or, alternatively, in the case of North America, by dollar bills.

Incidentally, three dollars are now the exact equivalent of one guinea, the combined entrance fee and subscription for one year.

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The title page and contents of Volume X of *Radio-Perception* can be obtained gratis from the Editor on application.

* * * *

The book by Mr. V. D. Wethered, B.Sc., entitled *A Radiesthetic Approach to Health and Homoeopathy* or *Health and the Pendulum*, is obtainable at the price of 10/6 to non-members and 8/6 to members.

The following books are also published by the Society:—
Dowsing, by Captain W. H. Trinder, 10/- (7/6 to members);
Radiations, by T. Bedford Franklin, M.A., F.R.S.E., 8/6.

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Contributions for the *Journal*, preferably in typescript, should be sent to the Editor at least five weeks before the first day of March, June, September and December, if they are to appear in the respective *Journals* for those months.

* * * *

The price of new *Journals* to members, in excess of the free number, and of old *Journals*, is 2/- and 1/6 respectively.

Six free copies of the *Journal* will be given, on request, to writers of articles in it, in addition to the usual copy.

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Copies of *Radiesthesia* IV can be obtained from Miss Barnard, 4 Wimpole Mews, London, W.1, price 5/-.

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The Society's badges can be obtained from the Honorary Secretary for 1/3 post free.

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OBITUARY

SWAIN, A. E.

A NEW SUSPENSION OF THE MAGNETIC NEEDLE

AND THE PRACTICAL POSSIBILITIES OF DETECTING
BY ITS HELP THE NON-POTENTIAL FIELD OF THE
EARTH

BY REV. A. GLAZEWSKI

This present paper was deposited with the Fundamental Research Centre in London on October 2nd, 1951. Since then it has been revised in regard to a few particulars. It is believed that it suggests a reasonable explanation for what is known by dowzers as earth radiation.

ABSTRACT

In considering the existence of the non-potential field of the earth as a real physical fact, it was concluded that a magnetic needle hung vertically with one pole up and the other down, so that it is able to rotate about its vertical axis—differing in that respect from the deep needle—would form a convenient method of detecting and measuring the strength of what is known as the "vertical current." The amount of the angular deflection of the needle ought to be proportional to the current's intensity. When investigating this possibility it was found—and this fits with the predictions of spherical harmonic analysis as well as with Maxwell's mathematical deductions for multipoles—that there exists a secondary magnetic polarity in any bar magnet, and that it possesses what has been labelled for convenience, east and west poles. From observation of suitable instrumental devices, daily tides of the non-potential field of the earth can be detected. Further observations have shown that ionospheric, as well as earth-magnetic disturbances, are connected with strong storminess in the intensity and direction of the vertical current.

FOREWORD

In the theoretical discussion given in Part I the reader will notice that, apart from some well established facts in geophysics, several new assumptions are introduced. All that is claimed for these is that they are the hypotheses which prompted the writer to carry out certain carefully conducted experiments with successful results. They are moreover in good agreement with the mathematical and theoretical considerations developed by the writer in his theory which holds that the Gravitational Wave is strictly connected with what is known as the "vertical current" (17). Nevertheless, though it is not claimed that the results achieved afford the final proof of these hypotheses, it is believed that they give them further support and justify the demand for their serious consideration.

PART I.—THEORETICAL DISCUSSION

It was shown long ago by H. N. Dickson (1), and subsequently confirmed by other writers (2), that in mountains, the earth's currents possess peculiar properties. As a result of researches on Ben Nevis, Dickson demonstrated that these currents ascended towards the peak when the top of the mountain was free from clouds, and descended when clouds covered it, or when rain or snow was falling.

From these experimental data two questions immediately arise :—

- (a) Where do these currents end and what is their origin ?
- (b) Why does a correlation exist between the currents and meteorological conditions ?

It has been suggested by some writers that such currents complete their course through the atmosphere (3), possibly as an ionic conduction current. However, the puzzling factor is that they are generally about 10,000 times greater than the intensity of the ionic conduction current in the air measured above the top of the mountains (4).

Apart from this most interesting fact, Luis Agricola Bauer, following suggestions and computations made by Adolf Schmidt and using his method for the analysis of the earth's magnetic field, pointed out the existence of a possible vertical current passing across the earth's surface, usually referred to in geophysics as the "non-potential field" (5). From careful measurements of the earth's magnetic field by further computations, it has been found that the line integral of the magnetic field over a certain closed portion of the earth's surface is usually not equal to zero. Mathematically if φ denotes the angle of the curve sector, H the horizontal intensity of the field, and ds the path of integration, then

$$\oint H \cos \varphi \, ds \neq 0$$

From vectorial analysis this points to the fact that this field has a curl and indicates the presence of a vertical electric current in accordance with the classical theory of electro-dynamics (6).

If i denotes the intensity of the current, then :

$$\oint H \cos \varphi \, ds = 4\pi i$$

In some arcs this current goes apparently upwards, and in others downwards, as measurements, e.g., in Japan (7) have shown.

Here again the values obtained from these measurements of the non-potential field show that the vertical current density ought to be about 10,000 times stronger than the usual ionic exchange between the earth and the air (8). This was in surprisingly good agreement with the vertical earth currents found

in mountains, which were supposed to complete their course through the atmosphere.

Thanks to a number of theoretical considerations which are omitted here (they can be found in the literature given at (9)), the writer has found good reason for assuming that such "hypothetical" currents are at least in some degree related to meteorological conditions (cyclones and anticyclones), a supposition supported by Dickson's observations on Ben Nevis. Taking into account other factors connected with weather such as insolation, temperature, &c., the writer is inclined to think that cyclones and anticyclones are to a certain extent an actual function of these currents, and not *vice-versa*, as might be concluded from the data supplied by Dickson.

Already Balfour-Stewart in his well-known paper published in the *Encyclopaedia Britannica* (ed. IX, vol. 16, pp.159-184) has pointed to the possible connection between what he calls "magnetic" and "metoerological" weather (see §§ 123-128, and also up to §§ 144 of his paper). In spite of the strong objections which may be raised against such a suggestion, later researches (9) tend to favour such a solution. Hence, it was concluded on the basis of all known data, that the actual link between these phenomena can only reside in the non-potential field or the so-called vertical current. From the vectorial side of classical electrodynamics this current was evidently connected with the barometric pressure (see Appendix).

Unfortunately the actual existence of such currents was still hypothetical as no experimental proof has been given and their mechanism was still an unknown quantity. For these reasons it has even been suggested by some writers that the evidence found for the existence of such "currents" is due to errors of observation (10).

In spite of such extreme views, it is generally however accepted that the non-potential field must have some real physical basis, though it is still problematic how such currents can actually operate. Highly speculative theories have been proposed to account for the existence of the non-potential field, but have failed, however, to give a reasonable explanation (11). Hence some authors are of the opinion that an unknown law of Nature may be responsible (12).

An explanation seems to me to lie in the very fact that the earth can be regarded as a huge spherical rotating condenser, where the respective plates are the earth's surface and the ionospheric layers, causing a P.D. of over a million volts. From this fact not only could a comparatively large portion of the earth's magnetic field be accounted for (1/15) but it would postulate a sort of huge but slowly pulsating Maxwellian displacement current in the air between the two condenser plates (see Appendix). Further implications of the greatest interest (from the electric

vector's analysis point of view) will at once occur to any well trained geophysicist.*

It is a well-known fact that during polar lights of great intensity, strong magnetic storms and ionospheric disturbances are in operation and are linked with the enhancement of telluric currents. Wireless circuits during such storms are often put out of order (13). However, in spite of all these facts hardly any changes in the electric ionic field of the atmosphere near the surface of the earth can be observed. It must then be concluded that the ionic conduction current cannot be responsible for the eventual link between the above-mentioned phenomena; but it is quite reasonable to draw attention to the non-potential field, as being able to provide a link between events taking place in the earth's crust and disturbances at great heights. In fact, from the experimental results described below, it appears that the changes in the vertical current densities are subject not only to daily tides of maxima and minima, but also to strong, and very often abrupt, changes—a sort of sudden commencement or *crochet*—on days of magnetic disturbances. Observations have shown that such disturbances are in many instances foreshadowed a few days in advance—usually 48 hours—by the non-potential field's strong distortion. This would indicate that the magnetic and ionospheric storms are the function of the distortions of the non-potential field. This of course remains to be proved.

Finally there is also reason to believe that it is very probable that ionospheric fadings connected with solar noise (14), as well as fluctuations in the intensity of radio waves from galactic sources (15), and also, to some degree at least, the scintillation of stars so much discussed lately, are partly due to local fluctuations in this "hypothetical" vertical current (16). Such assumptions were in good agreement with the general

* Other reasons for the mechanism of such a "current" has been suggested by the present writer in his paper "The Gravitational Wave" (16). It was shown there that it is due to the longitudinal component of any electromagnetic wave. A careful analysis led to the conclusion that it is identical with the De Broglie mass wave connected with momentum, to which gravitational and anti-gravitational phenomena are related. Hence the tides of barometric pressure which are evidently linked with gravity fluctuations seem in some respect to be the function of this wave.

From the vector analysis point of view the existence of vertical currents follows from the fact that the measurements over a path on the earth's surface, though appearing closed to an observer revolving with the globe, nevertheless, to one standing outside the earth, maintain a circular path that is *never* closed. This is simply due to the earth's motion (spin and orbital). For such an observer every measurement is taken around this path at an entirely different place in space relative, say, to the sun. Whilst these measurements were taken the earth has shifted in space. A curl necessarily results and a vertical current across the surface follows. We see that this current is due to the mass in motion, i.e., momentum. This was predicted in the writer's paper just mentioned. (Compare with Appendix).

results given by the present writer in his discussion on the gravitational wave (17), for it explains the difficulties connected with the point sources of radio-galactic noise, as put forward by Menzel and Cromvley (18), and finally links certain meteorological factors connected with magnetic and ionospheric problems to the barometric pressures, first pointed out as possible by Balfour-Stewart and developed later by Schuster and Chapman (19).

Whatever may be said about these assumptions and working hypotheses of mine, and in spite of objections which can be put forward against them, they have nevertheless been adopted as a basis for experiments intended to verify the existence of the unknown forces under discussion. It was then concluded that, if a sort of current passes vertically through the surface of the earth, it should be possible to detect any changes in its intensity and direction by observation on a magnetic needle. The only condition was that this should be suspended, not horizontally, in the usual manner, or vertically as a deep needle is, but vertically with one pole up connected to a cocoon fibre and the other down, so that it could rotate about its vertical axis. It was evident that every change of the vertical current in intensity or direction, should induce in a needle so suspended an angular momentum about the vertical axis, that is the N.S. poles, in accordance with the well-known rotating properties of magnets. It was believed that, in this way, measurements of the variations of the current could be obtained and quantitative results inferred from the amount of the deflection. In other words the amount of rotation in degrees would be proportional to the intensity and direction of the current whether going up or down.

Apart from this, if ionospheric conditions were strictly connected with these currents, then such a rotating needle would be a perfect indicator of ionospheric disturbances. Verification could easily be made by comparing graphs of the needle's movements with corresponding results obtained by wireless ionospheric sounding.

Before we approach the description of the experiments themselves a short discussion is still required about the newly found secondary magnetic polarity, which has been for convenience labelled provisionally the "east and west polarity."

After a very careful study of the many and voluminous works of Prof. T. J. J. See (20), his claim that magnetism is due to a wave, was seriously considered as a possible solution, and seemed to be a promising one. To start with, the existence of a progressive wave was immediately dismissed for obvious reasons. However, it was quite acceptable to visualise it as a sort of standing wave, resulting from the superimposition of single waves of particular domains, onto a standing wave interference pattern in the space surrounding the magnetic core.

The thermal agitation of particular domains in an iron bar after being magnetised, should be polarised in the direction of the field, this polarisation being proportional to the intensity of the field, \pm an angle ϕ . By summation a standing wave interference pattern is quite conceivable. From the works of See it was also obvious that such a hypothesis could be accepted only in assuming the longitudinal character of this wave, which See actually tries to prove. These claims of See and the solution of the problem by a standing wave, were also in good agreement with the similar longitudinal wave interference pattern connected with the static fields of electricity—as shown elsewhere by the present writer (21).

The idea of a pure magnetic flux, as proposed first by Euler (at which he arrived from the analogy of blood flux from the heart, being himself medically trained) was for the moment entirely dismissed. Instead, the standing wave concept was admitted. This assumption, it was believed, could be verified by trying to distort such interference pattern by using another magnet, not by approaching a magnetic pole to a horizontally suspended magnetic needle in the usual way, but by approaching it to a magnet vertically suspended from a very fine fibre with one pole up and the other down. This new-found suspension could enable the hanging magnet to rotate about its vertical axis (see Figure 1). It was quite obvious that if there were a standing wave interference pattern in the field surrounding a magnetic core, then by interference the principle maxima and minima should appear at the equatorial plane forming two secondary poles. Of course such secondary polarity would be only detectable by a device involving a suitable form of suspension. The ideal vertical suspension was then conceived. If now, to a needle so suspended another magnetic pole were to be approached towards the equatorial plane of the hanging bar, its standing wave interference pattern would be distorted, forcing the magnetic hanging bar to a torque, and the secondary poles would be respectively attracted or repelled or eventually shifted toward a different region.

Another corroboration of the idea of the existence of a secondary polarity came from Maxwell's theory of multipoles (22), applied later by spherical harmonic analysis to the earth's magnetic field with most interesting results. This analysis points also to the possible wave solution of the magnetic field, and suggests the presence of the interference pattern. A striking result is the provisional evidence for the existence as an equatorial dipole of mathematical points near the equator at longitudes 111° east and 291° east (23). It is self evident that in the conception of a wave interference pattern the secondary polarity does not reside in the bar magnet itself but in the surrounding space, being, however, the function of the molecular arrangement of the bar itself.

This hypothesis of a magnetic standing wave and interference pattern entailed the assumption, for the terrestrial globe, of a similar standing wave from an electric field of static nature (in agreement with the brilliant thesis of Ferrero and Unthank (24)), which again corroborated the results obtained by the writer regarding the connection of the electrostatic field with a standing longitudinal wave pattern. In other words the analyses of both the magneto-static and of the electro-static fields led to similar conclusions and linked well together. It remained to verify experimentally whether this reasoning was in agreement with the physical facts.

PART II.—DESCRIPTION OF THE EXPERIMENTS

A carefully magnetised needle about $2\frac{1}{2}$ inches long was first hung vertically on a cocoon fibre by the N pole of the needle, with the S pole pointing downwards. This new form of suspension required theoretically, permitted the needle to rotate about its vertical axis. It is thus essentially different from the suspension of the deep needle.

In order to eliminate any asymmetry in the field surrounding the core, due to the difference of planes of a polyangularly shaped magnet, an ordinary sewing needle was selected because of its perfectly circular shape. On the top of the needle's point a small piece of chamois leather was glued, through which a small hole was made. A very thin copper wire (1/5th mm. in diameter) was passed through this hole and a loop made at its upper end. To this loop a cocoon fibre was glued. Through the eye of the needle another copper wire of the same diameter as the other, and with enamel insulation, was passed in such a way that both ends projected horizontally about 3 inches on each side. Thus any movement of the needle about the vertical axis was easily noticeable through the displacement of the horizontal wires. Immediately underneath the hanging needle, a circular dial, marked in degrees, was fixed, so that the axial turning moment of the magnetised needle as indicated by the wire pointers could be read off.

The first thing which can be noticed by a careful observer is, that a needle so suspended will always assume the same position toward the magnetic poles of the earth. The needle can be moved as much as one likes in any direction, but it will finally return to its original position.

If, now, we approach another magnetic pole towards the middle of the vertical needle, say the N one, it is immediately seen that it begins to turn and assumes a certain position. If we turn the needle by hand it will always come back, but directly the approached magnet is removed the needle will again turn the

same side towards the earth's magnetic pole. If the magnetic bar is again approached, the vertical needle repeats the movement. Instead of the N we now approach the S pole, and the needle immediately turns 180° out of phase with its previous position. The experiment can be repeated indefinitely but the result will always be the same. When, instead of a needle, a magnetic bar, one cm. in diameter and 10 cm. in length, is hung on a very thin nylon thread, the same effects take place. But as the weight of the bar is rather large in comparison with its magnetic force, we get a similar response when the bar magnet is approached to the middle or to either pole.

The objection that this effect is due to uneven magnetisation can hardly hold good, as in all cases no difference in the results was ever observed.

From these experiments the following conclusions were drawn :—

- (a) Every magnetic bar must have a secondary polarity at right angles to the N and S poles.
- (b) This polarity exists throughout the whole section, that is along the meridians of the magnetic bar, but with maximum intensity at its magnetic equator.

The two poles were called preliminarily east and west (we shall refer to them from now onwards as E and W poles); the east is that which is attracted by the S pole and the west that which responds to the N pole.

In the next experiment it was decided to eliminate all possible torsional forces. Therefore, instead of hanging the magnetised needle on a cocoon fibre, a cork slice was cut from an ordinary bottle cork, and was pierced through the middle of its circular face by the magnetised needle, and then dropped onto a surface of camphorated oil in a bowl 12 cm. in diameter. The wire pointers were of course omitted. (Camphorated oil was selected for its comparatively low surface tension coefficient). The results obtained with this device were perfect and identical with the previous ones.

A further surprising and new effect was, that when the approached magnet was kept at the same distance from the floating needle, and moved up and down, parallel to its vertical axis, the floating needle, instead of maintaining the same direction, reacted with a slow to and fro turning movement, that is to say that when the approached magnet was moved upwards, the needle turned in one direction, and when the same pole of the magnet was moved downwards the needle turned in the opposite direction. The extent of this angular movement usually amounted to a few degrees only, but was easily noticeable. It seems that the angle is not the same for every needle, so far as experiments undertaken to date show. This phenomenon may be due to unequal magnetisation or to inconsistency in the material of the

vertical needle. But if this is so it is not clear why this inequality appears only at the ends of the magnet. To arrive at a more precise conclusion, far more accurate laboratory equipment is required than that now available to the writer.

However, the phenomenon can also be explained on the assumption that the magnetic lines of force, from N to the S pole are running, not in the same sectional, or, say, meridional, plane, but are following a slightly spiral line. This can be expected from a purely tensorial consideration of the magnetic potential, as well as from the wavy nature of the magnetic field. It would also supply the reason for the rotation of the magnetic bar about its N-S axis. But, disregarding theoretical considerations, the fact itself is clear; it remains only to find out whether the phenomenon is the result of inconsistencies of material, or is due to a condition inherent in every magnet. For exact determination the experiments should be conducted in a high vacuum with the object of finding out whether the medium through which the magnetic field extends has any influence on it. These ideas may throw new light on the latest dispute in the *Comptes Rendus* about Prof. Ehrenhaft's experiments.

For reasons given below, the next experiment was as follows. The needle was held as before in a cork slice but the exact spot on the side of the cork which always turned towards the N pole of the approach magnet was carefully marked with a biro pen. It was verified whether the mark was at the correct place and that it was in line with the W pole of the needle. The cork was then removed from the oil and slightly turned on the needle so that the mark no longer corresponded with the west pole. Logically it would be expected that *if the west pole is the deciding factor*, then, when the N pole of the bar magnet is brought forward to the floating needle, the mark on the cork would not, as before, point to it. To my great surprise something quite different happened, for the mark on the cork again turned towards the N pole of the approached magnet, and shifted 180° out of phase when the S pole was approached. This was totally unexpected from the orthodox scientific point of view.

In order to obviate any possible mistake the cork slice was now turned in respect to the needle so that the mark which formerly pointed to the W pole of the needle now indicated the E pole. The experiment was repeated again and again. Still, contrary to all expectation, the mark on the cork slice always turned towards the N pole of the approached magnet. Could there be any residual magnetism in the cork? Such an idea was absurd, but the results were so improbable from the theoretical point of view, that in order to dismiss any misunderstanding, the needle was removed from the cork slice and the latter dropped on the liquid surface by itself. It might be supposed that minute iron splinters were present in the cork before it was used for this

experiment, but the cork showed no sign of response even to the strongest magnet obtainable.

The steel needle was then again introduced into the cork slices, several of which had been tried. Every time the experiment was repeated the results were exactly the same, except in a few cases when a slight deviation could be observed, namely that the mark on the cork after being turned relative to the needle did not point exactly to the N pole of the approached bar magnet, but deviated by a few degrees. Similar effects were obtained with the S pole. The reason for this deviation is still unknown, but it was concluded that the first piercing of the needle through the cork is the deciding factor, although it might also happen that if the same cork slice is pierced several times by the magnetised needle some difference would occur.

The next conclusion and the only one possible, was that the cork had been *impregnated with "something"* which in itself is not magnetic at all, but will react only in connection with the magnet. This something was provisionally labelled "Etheroid." Further experimental results indicate that this conclusion has some foundation. This bears an analogy with the J. G. Sulzer experiments (in 1752) with two pieces of different metals which, only when connected together, were found to produce an electric current (25).

Before we pass on to Part III, that is to the practical application of these discoveries to instrumental solutions, it would be interesting to mention what led the writer to carry out this last experiment. A German scientist in the middle of last century, Karl von Reichenbach, a very careful experimenter, claimed in his later works that magnets possessed some peculiar properties. These claims were at the time disregarded for lack of solid proof and theoretical background. He found that some people, whose eyes were more sensitive than others (probably to the ultra-violet and/or infra-red wavebands) could, after being in complete darkness for several hours, see light and some sort of flame about the magnetic poles. As a great many people were examined independently, and with all precautions demanded by sound methods of research, and further, as all these people reported independently exactly similar phenomena, there was strong reason to suppose that his observations were veridical. Under certain circumstances this light could be focussed by lenses, and was found to affect photographic plates. Yet the evidence in those days was not strong enough, and after Reichenbach's death this line of research was entirely dropped.

At the first glimpse it seemed to the writer that, in the light of modern knowledge, the facts were not very improbable. In any magnetic field the air molecules, thanks to their electromagnetic field, would become dipoles and their thermal motion would be easily polarised to a certain degree in the direction of the field.

This is obvious. This polarised beam of molecular motion, thanks to the periodic change of their electromagnetic fields should produce electromagnetic waves of extreme faintness (in the infra-red probably). There is no reason to assume that this could not be seen by specially sensitive eyes which had accommodated themselves after a long time in a completely dark room.

Apart from this there is yet another and puzzling factor. These persons claimed that they could see in absolute darkness beautiful colours above a large iron sphere, through the vertical axis of which a strong electromagnet was fixed. These strange lights enveloped the sphere, and were strongest at the poles, fading slowly toward the equatorial regions. Each colour occupied a separate section along the meridians of the sphere, so that each vertical section showed a different colour. So long as the electromagnet was operating these lights were visible, but when the electric current was switched off, without the knowledge of the person who saw the phenomenon, the light was immediately reported to vanish. When the sphere was turned about its vertical axis the colours did not change their respective places relative to the fixed surroundings. They seemed to stick to their position, as if the magnetic field of the earth was exerting some influence.

Claims such as these are so precarious that it is no wonder that the scientific world in those days was sceptical and, finally, in lack of a rigorous proof, disregarded them. The present writer was well aware of these claims, but no scientific reason for them seemed to exist. When the new magnetic polarity was discovered the Reichenbach claims were immediately recalled and there appeared to be some hope of a satisfactory proof.

The experiment with the cork slice and magnetic needle points to a very similar phenomenon. Here also, the magnetic needle is turned relative to the cork slice, but in spite of the forces acting in the magnetised needle, the cork has acquired new properties relative to this magnetic field, which are evidently stronger than the east and west magnetic polarity. The new property is also independent of the poles. The similarity to the Reichenbach claims is very striking.

The experiment with the hanging needle without the cork slice clearly shows that the magnetic field turns with the core, whereas the experiment with the cork slice indicates that it is not the earth's magnetic field that has the last word.

It should be repeated here that the whole problem was most carefully analysed, and that the only conclusion which appears logical to the writer is that *the cork, and eventually the surrounding medium of the magnetic core, is "impregnated" with "something" which was called, for lack of any name, "Etheroid."* An analogous phenomenon has been noticed by the writer in electrostatic fields; this will be a subject of a separate paper to be published

at a later date, as it needs more investigation. There is some reason to believe that the Etheroid of magnetism is different from the phenomenon in the electric field. If this could be finally proved, then the specific names proposed would be respectively "Magnetoid" and "Electroid," whereas "Etheroid" would be the generic name.

Whatever may be said about Reichenbach's claims and the proposed names, it should be emphasised that we are here confronted by a new and indisputable fact, *although a quite different interpretation may be found after longer experimental research.*

I am indebted to Mr. F. J. Billington, of Kingskerswell (S. Devon), for the idea that if the experiments described above are true, then the magnet should be comparable to a sort of "crystal." Although to begin with this appears to be only an analogy. Nevertheless we have to recognise at least three axes in any magnetic bar. The north-south axis, the east-west axis, and finally the third, at right angles to the other two, in which no special properties have yet been found. There are however some indications that this third axis does possess properties of its own, but, before a definite proof is forthcoming, it is better to abstain from any statement. It is also not improbable that each intermediate side or, say, meridional section of the field of a magnetic bar, between the east and west poles will have its own peculiar properties. This would follow from Maxwell's multipole idea (22). Furthermore, along every such meridian, particular points will have their special properties symmetrically disposed on both sides, thus producing a standing wave interference pattern, in which all these points will be harmonically related. This remains to be proved. A further study of the geophysical magnetic field in this respect would be most desirable.

It is believed that the old claims of Mesmer and Hell (professor of astronomy at the Vienna university) may find some support in this new discovery.

PART III.—PRACTICAL APPLICATIONS

It is unnecessary to say that this newly found polarity of magnetism is not only a scientific curiosity but will also have a bearing on many branches of science. It will throw light on various problems in astronomy and in atomic physics as well as in geophysics. All this is obvious. Apart from the new polarity the detection of the "vertical current" or non-potential field as a physical fact, provides interesting possibilities in researches on the nature of gravity, atomic energy and medicine. In a separate paper it will be shown that the non-potential field will probably supply the solution to, and clarify the problems of, dowsing and the earth's radiation which have for so long been in dispute.

Below are described some devices and instrumental detectors which are in use for geophysical research in the writer's laboratory.

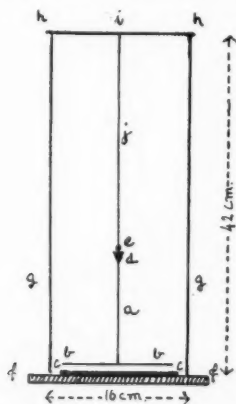
DESCRIPTION OF INSTRUMENTAL DEVICES

Three separate instruments are here described :—

- (1) The vertical current detector
- (2) "Etheroid" disturbance detector.
- (3) Direction finder for the earth's local electric field charge density (horizontal component).

(1) *The vertical current detector*

A cellulose cylinder of 16 cm. diameter and 42 cm. high encloses a magnetic needle hung vertically as described above, with a copper wire across the eye of the needle and with the S pole downwards. The copper wire serves as the indicator of the amount of deflection in degrees, from which the changes and disturbances in the vertical current can be observed. All details of the needle are the same as described in the experimental part of this paper. The deflection is read on a dial graduated in 360° , fixed underneath the needle on a wooden plate which closes the cylinder at the bottom. The needle inside the cylinder is entirely shielded from air currents. A cocoon fibre 2cm. long has been glued to the needle so that the slightest movement of the air would be indicated. The possible objection that air currents are responsible for the turning of the needle are thus entirely obviated.



VERTICAL CURRENT DETECTOR (AX)

- a* = magnetised needle
- b* = copper wire dial pointer
- c* = dial
- d* = chamois leather
- e* = wire loop
- f* = wooden plate
- g* = cellophane cylinder
- h* = cellophane plate
- i* = hole
- j* = cocoon fibre

A schematic diagram of the instrument is here annexed. (Figure I). The top of the cylinder is covered with a piece of cardboard with a $\frac{1}{2}$ mm. hole in the middle through which the cocoon fibre is passed and glued to the outer surface. This hole admits of the passage of air so that the air pressure is adjusted to outside conditions. This instrument will be referred to as "AX."

Another device was constructed, but with the needle of the N pole downwards. In this, instead of a cellulose cylinder a wooden box is used, its top covered by a thin perspex plate (2½mm. thick) which is transparent. The front and the back of the box, instead of wood, are made from a very thin flexible cellophane sheet, as used for packing. Thus the needle can be observed from the outside whilst shielded from all air currents. The box is 22cm. square and 16cm. high. On top of the perspex plate (covering the upper side of the box) a bakelite tube one inch in diameter and 26cm. high is fixed in the exact middle. Through this tube the cocoon fibre is passed supporting the hanging magnetic needle. This instrument acts as a sort of control of the former in having the N pole downwards.

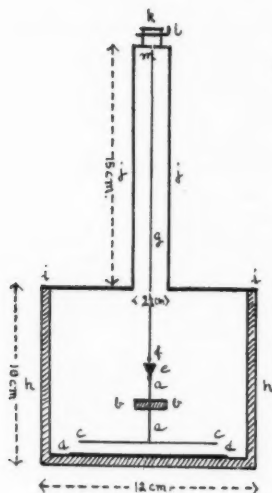
At first a smaller box was used, made from 3mm. thick sheets of perspex. But this arrangement was found useless, as electric charges accumulated on the walls and possible "impregnation" stopped all motion of the needle. Even a box 22cm. wide and 9cm. high was too small. If any of the sheets were slightly rubbed with the finger, there was an immediate deflection of the needle, showing that it was the electric field which caused movement of the needle. However, it was observed that the influence of the charge lasted only for a few minutes or sometimes even seconds, and then the needle returned to its former position and remained motionless, in spite of the fact that the electric charge was still present on the perspex wall. This shows that it is not the attraction of the charge which is the cause of the movement. This peculiar behaviour of the needle cannot be accounted for—so the writer believes—by Physics as now understood. The argument that the needle only indicates the presence of an electric charge will not stand up to critical analysis.

It was found that when the needle was suspended in the manner described, but a part of it concealed from sight by the bakelite tube, its movement was stopped. The explanation was believed to be that the close vicinity of the walls of the tube, "impregnated" by the Etheroid, stabilised the needle in one position so that only a stronger magnet could move it. But, directly the needle was lowered so that the whole of it became visible, it started to move again.

The present writer does not insist on an interpretation due to impregnation. A better one would be most welcome, but up till now no other has been advanced which could explain all the peculiarities definitely observed.

(2) *The Etheroid disturbance detector*

The accompanying schematic diagram (Figure 2) gives the general view and details. The needle again hangs on a cocoon fibre as in AX but supports a cork slice which it has pierced through the centre of the circular face. At the bottom of the



ETHEROID DISTURBANCE DETECTOR (ABX)

- a* = magnetised needle
- b* = cork slide
- c* = cardboard pointer
- d* = dial
- e* = chamois leather
- f* = loop
- g* = cocoon fibre
- h* = wooden box
- i* = perspex plate
- j* = bakelite tube
- k* = mounting
- l* = wire with handle
- m* = hole

needle, instead of the copper wire, a thin ($\frac{1}{4}$ mm.) strip of cardboard 2 mm. wide and 6 cm. long has been fixed by passing the point of the needle through its centre. The ends of this strip are cut to shape of pointers. The eye of the needle is in this case upwards and the N pole is at the lower end. The container, shielding the needle entirely from possible air currents (as in both former instruments) is made of wood, but the front and the back walls are of very thin cellophane sheets (as in the control instrument described above). The top of the box is covered with a perspex plate 3 mm. thick. In the centre of the plate a bakelite tube one inch in diameter and 15 cm. in height is fixed. At the top of this tube there is a special mounting. Through the mounting a copper wire with a handle is passed horizontally, so that it can be rotated about its own axis. To this wire is glued the cocoon fibre which supports the hanging needle. When this wire is rotated by the handle, the needle can be lifted or lowered and its height adjusted. The top of the tube is covered with a round perspex plate through which a small hole is made. The cocoon fibre hangs through this hole. This instrument will be referred to as "ABX."

(3) Directional pointer or recorder

In this instrumental device the vertical magnetic needle is not used; nevertheless it has been constructed in relation to the theoretical considerations about the vertical current or non-

potential field. Hence it is considered proper to describe it here, as a correlation appears to exist between the movements of this instrument and of the AX and ABX.

In all recording stations and observatories the point discharge measurements have been made up till now with the discharging points fixed in one or two directions only. At times the vertical or horizontal position, or in some stations both, are used, but the pointer is always fixed so that it cannot rotate towards the direction of maximum intensity of the charge density. From publications on point discharge researches such as: *Atmospheric Electricity During Disturbed Weather* (26), or *Point Discharge in the Electric Field of the Earth* (27) and the like, as well as from the graphs usual in these research fields, it is evident that the fluctuations of the electric potential occur not only in the vertical direction, but that they also travel along the surface of the Earth. Such graphs as, for instance, those given by Simpson in his work (27) on Plates XI, XII, &c., connected with weather fronts, show without ambiguity that the charge density has a directional motion. It means that the differences of potential are in constant movement in a horizontal as well as a vertical direction.

It was therefore considered that it should be possible to detect the direction of these movements by means of a suitable device. There were other theoretical reasons based mostly on tensorial considerations of the electric potential, and the condenser hypothesis described in the Appendix, confirming such views. It was considered that cyclones and anticyclones were also connected with the potential considered as a tensor, and this impelled the present writer to construct the device here described.

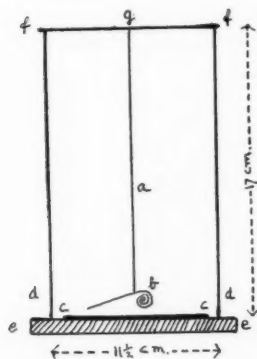
The instrument is a version of the earth potential Directional Point Discharger. The difference is that the pointer instead of being earthed is freely suspended in the air and is believed to register the directional motion of the electric charge in the air itself.

It is obvious that if there exists in the atmosphere near the ground a moving charge cloud of variable charge density—and this seems clearly to be so from such researches as Simpson's—then a thin wire hung conveniently on a cocoon fibre will be subject to induction. This wire will then acquire an opposite charge on both its ends and will turn with one arm to the direction in which the strength of the inducing charge will have its maximum gradient and to the direction of minimum with the other. This was one side of the problem. But there is another one.

If there exist any vertical current, and there are strong reasons to believe that such do exist (see above), then this wire with an induced charge should assume the position of least resistance in the respect to such a current. There were also solid reasons for supposing that this vertical current would have different inten-

sities in different places, and would not be stationary, but would move about the surface of the earth in different directions. (See Appendix). It was believed that the air charge-clouds, especially those connected with weather fronts, are partly at least the function of such vertical currents, in which case a point discharge indicator would show, as a resultant, the directions of both phenomena. It was also realised that the direction as well as the speed of moving charge densities could be detected by installing several instruments at different observing stations. A correlation of records of the directional point discharger with the well known fixed point recorders should provide most interesting information.

To be fair it must be stated here that, though the recorder in the writer's laboratory is practically in constant motion during day and night (the observations were begun early in February this year, i.e., 1951), nevertheless it is still problematical whether these movements are those assumed on theoretical grounds. To be certain, much longer observations are required. In any case from what has been noticed up till now, there seems to be hardly any doubt that there exists a correlation between the movements of AX, ABX and this recorder, which will henceforth be referred to as "ACX."



DIRECTIONAL POINTER OR RECORDER (ACX)

- a* = cocoon fibre
- b* = wire dial pointer
- c* = dial
- d* = cellophane cylinder
- e* = bakelite plate
- f* = cellophane plate
- g* = hole

The general appearance of the Recorder is shown in the accompanying diagram (Figure 3). The wire dial pointer is entirely shielded from air currents by a cellulose cylinder 17cm. in height and 11½cm. in diameter. This thin copper wire (1/5th mm. in diameter) coated with enamel, is suspended from a cocoon fibre, which in its turn is glued to the top of the cylinder. This is covered with a cellulose plate with a very small hole in the middle. Through this small aperture the cocoon fibre is passed

and glued to the outside of this cover. Underneath the wire a dial of 360° is fixed on a 6mm. thick bakelite plate, on which stands and is fixed the cellulose cylinder. From the dial the deflections of the wire can be read. The wire itself is fixed to the cocoon fibre so that it is perfectly balanced, by one side of it being wound into a spiral in the vertical plane.

INSTRUMENTS IN ACTION

General remarks

For reasons (financial) beyond the writer's control, automatic recorders could not be connected to these instruments. However, it could be done by attaching a small mirror to the needle or wire, and using the popular light deflection methods. There is, however one difficulty. During disturbed days the deflections on AX, sometimes exceeded 100° within 30-50 seconds. Such movements are not easy to record on a revolving cylinder unless it is very wide. Also the proportions of the amplitudes of the records would for obvious reasons be greatly distorted on a cylinder.

The usual daily tides *at some places* on quiet days amount on AX to 25° , on ABX to 40° , whilst on ACX they reach 80° , whereas *at others* these movements are much reduced. During disturbed days these deflections are much enhanced except on ABX where the deflections often fall. The reason for this is not yet known, but it may be due to the conditions surrounding the instrument. This is yet to be established.

On ACX it has been noticed that about once a month the pointer revolves through 360° .* Whether this is due to lunar motions or to some other cause has not been discovered. It may be due to some accidental cause arising during the short periods of observation. Neither can it be decided whether the solar and lunar component is obtainable from the daily tides, but this seems to be now probable. The reader must realise that systematic hourly records taken daily started at the beginning of August this year (1951), hence the writer must abstain from any definite statement until observations have been made over a longer period. *

Yet another remark must be made. The writer is in charge of a large parish and therefore gaps of several hours often occur in the daily records. Nevertheless the utmost was done to preserve regularity. The table at the end will give an idea of the recording done. The first column gives the time of registration (BST), the second refers to ABX, then comes ACX and finally AX. The fourth column refers to telluric current measurements which are given in microamps. The telluric checking line

* Since this was written further observations have not confirmed this statement. This paper was written in September, 1951.

extends in the E-W direction (the only one possible by local conditions) and was limited to a length of 200 yards so that only local data would be registered. The plus or minus sign is an arbitrary one to denote whether the current flows from W to E or *vice versa*. This locality is far from any power station. It was assumed—on reasonable grounds—that the other recorders were registering only local changes, and that therefore records of the telluric currents should be of a comparable nature. The next column gives the barometric pressures, and finally some notes on local weather conditions are given in the last column. It would be desirable to have local records of all three components in magnetographs, as well as the ionospheric sounding data. It is further desirable that local records be made of radio-galactic noises and scintillations of stars, and, during day time, of solar noises. This would make it possible to verify whether there is any correlation between these phenomena and the changes in the non-potential field. As was mentioned in the introduction it is believed that all these facts are inter-related.

Finally, these very short observations indicate that there are two kinds of wind in our atmosphere, one having a thermodynamic and the other an electrodynamic origin. Hence the aerological daily local records may prove useful.

Time since the observations on these recorders were made

A primitive form of ACX was first constructed and observations begun in February, 1951. It was at once noticed that it was in constant action at periods during the day when certain meteorological conditions prevailed, at times of ionospheric disturbance, &c., and that it fulfilled at least to some degree what was expected. Consequently several patterns were made for different purposes. One of these is described above. Systematic hourly observations on this recorder started on August 7th, 1951.

The next instrument to be made was AX, in May, 1951, and systematic hourly notes have been kept ever since August 6th, 1951.

The last recorder ABX was constructed in July and hourly recordings started on August 7th, 1951.

Position of the recorders

The geographical position is N 50° 33', W 3° 39' which is far enough from the south coast to escape disturbances in the earth's currents, resulting from the tides of the Channel.

At present the recorders are kept in a very small room (5ft. by 11ft. 6in., which is also a sacristy) crowded with valve amplifiers, oscillographic recorders, pulse-generators, &c., which, of course, distort the readings to a great extent. Unfortunately no other room is available. Hence, in order to get any results, the instru-

mental recorders are kept permanently in the same place with the surroundings unchanged. Once the needles have adjusted themselves to their environment, the distortions can be read off from the deflections. The ideal would be a specially constructed room.

The needles are extremely sensitive to their immediate surroundings, so these are described here in some detail. All recorders stand on a wooden shelf, one beside the other, 4ft. 6in. above the floor, which is of concrete. Underneath the AX there happens to be an iron support. Also an iron band supporting this shelf from the top, passes by the side of this instrument. Behind the shelf is a brick wall. Further, beside the AX stands the ACX, then the control recorder and ABX. The two last stand above a large type of cathode ray oscilloscope. On the other side of ABX there is a large wireless receiver.

From this description it can easily be seen that the readings are only relative.

Remarks on observations

It can easily be gathered that only very preliminary remarks can be given here, as the period of hourly recorded observations is far too short to justify any definite statements. Further, practically every week new and unlooked-for phenomena are observed, which indicate that the instruments are sensitive to other unexpected influences. Therefore, until it is well established to what influences the hanging needle is susceptible, definite conclusions cannot be reached.

The first thing observed was that all three instruments are sensitive to heat. This cannot be attributed to the properties of the fibre, as in all three instruments the same kind of fibre is used, and the response of every instrument is different. Hence the response must be due to the device itself.

AX after being heated by an electric stove from a distance of about six inches, assumes on some days a very vigorous to and fro movement, with sharp stops, sudden starts and changes of direction, with deflections up to over 100° within less than 30 seconds. On other days it reacts slowly with few movements of far lesser amplitude. These differences cannot be attributed to dampness as a sensitive hygrometer used with both types of experiment showed the same percentage of humidity. ABX moves in one direction and, having reached a certain position, stops and for a while remains motionless; then it usually recedes and returns to its former position. The movements are slow and without any sharp stops or turnings as in AX. More or less the same happens with the control instrument. Hence it may be that the cause is due to the N pole being at the bottom,

which is the case in both instruments (ABX and control). This point will be settled shortly. ACX gives hardly any response with very few exceptions, and when it moves it does so very slowly and with no large deflections. As this instrument is usually in constant movement of a very slow type, such movements may be the result of other causes than heat.

When all the recorders were exposed to sunlight, they react very strongly and almost at once. Here the characteristics of all three, or rather four, recorders' movements are practically identical. Perhaps it is better to say similar. They have the same to and fro character; sometimes the needle moves a few degrees and then suddenly makes a vigorous deflection, stops abruptly and changes direction; then it stops again and remains still, and again restarts. The direction in which it will move an instant later cannot be predicted. The reason for these movements is *not* understood unless—so the writer sees it—momentum is accepted as the cause of the rise of the “gravitational wave,” otherwise the rise of the non-potential field. This view is of course open to objection and discussion.

From these experiments and the facts presented it must be concluded, that in order to get any objective readings on these recorders, they must be shielded from sunlight and the temperature of the room must be maintained constant as far as possible. We may emphasise here that these movements are not the effect of air currents. As stated above, in order to make sure of this a specially short piece of fibre (cocoon) was glued to the needle in such a way that the slightest current of air would move it, but during even the most pronounced movements of the pointers no movement of the fibres was observable.

A further established fact is that all three instruments are practically in constant motion throughout the day and night. Sometimes the movements are very slow, of the order of few degrees in 10-15 min. (during very quiet days it has been observed that for more than an hour they were absent), whilst at other times they were strong and rapid, amounting to several degrees per second. During disturbed days deflections have reached more than 100° within half a minute. This does not happen on the ABX. Here the deflections hardly surpass 10° at times. The ABX at certain positions of the needle is extremely sensitive to the presence of the human body, but this may be attributed to heat, though it is difficult to explain why the reaction of the instrument is practically the same to the fierce heat of a hot stove as it is to a stretched out finger. It often happens that strong heat does not have as much effect as the near approach of a hand. But it must be repeated that this phenomenon takes place only when the needle is in its initial position *and the room*

is kept very cool. Also an electric stove which gives far more heat from a distance of two feet than a human body from about the same distance, influences the needle less than the body. This shows that it is not easy to explain the reaction in terms of heat only.

Anyhow, whatever the explanation may be, the fact hitherto unknown to physics, that a magnetic needle responds to heat is of great interest.

Daily records, compiled from hourly observations taken over two months, all reveal that daily tides take place and that during disturbed days the movements are enhanced. Also during some hours of the day or night deflections are greater than at other times.

As far as one can see, meteorological conditions have a strong influence on these records, or, and this is more probable, the fields to which these instruments react influence the weather.

On one occasion, the only one during the period of hourly recording, a thunderstorm was passing by. During the whole day the ACX pointed toward the west, with the exception of the two hours when the thunderstorm was passing southward. Then the pointer moved through 90° and pointed toward the south. Further opportunities must be awaited, but this behaviour seems to show that the instrument will fulfil expectations. When a large metal ball is electrically charged and approached to the recorder, the needle starts moving and points to a different direction than before, *but not always to the ball.*

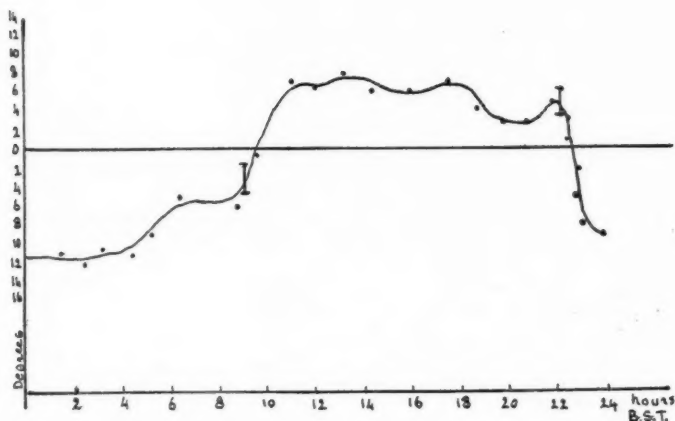
On many occasions a sudden enhancement of the movements on one or more of the instruments has been noticed for a short period of time, and then everything stops and returns to normal conditions. On other disturbed days through several hours or throughout the whole day and night the movements are of an enhanced type. Thus on the 25th of September, 1951, during the whole day the movements of AX were enhanced. The same night at 10.45 p.m. a magnificent display of Aurora Borealis was noticed here and observed up to 11.10 p.m. During the appearance of the aurora the AX was comparatively quiet. The daily records here will be compared later with magnetographs and it will then be possible to verify whether magnetic storms and the disturbed days of AX are in correspondence. The same ought to be done with ionospheric records.

Following the tabular record for a disturbed day is a graph showing the disturbances on five comparatively quiet days. It is most unfortunate that for the present no more data can be given. Nevertheless, it is hoped that further observations will supply enough information to clarify the problems involved in this most interesting field of research.

RECORD OF THE INSTRUMENTS ON A DISTURBED DAY, SEPT. 25th, 1951

25.9.1951. Time : B.S.T. Sp.=strong pulses. agit.=visible to and fro motion of the needle of the mic-ammeter

Hour	ABX	ACX	AX	Earth current	Barometric pressure	
7.05	134	90	203	-24	29.3 $\frac{1}{2}$	Raining
7.55	137	86	188-210 Sp.	-24 $\frac{3}{4}$	29.3	Raining
8.55	147	84	227-15 Sp.	-24 $\frac{3}{4}$	29.3	Raining
10.17	131-142 Sp.	84-87 Sp.	190-225 Sp.	-24 $\frac{3}{4}$ agit.	29.3	
11.30	164-70	97	210-17 Sp.	-22 agit.	29.3	Slowly clearing skies
12.47	159	93	222 Sp.	-25	29.3	Slowly clearing skies
1.35	159	137	216 Sp.	-26 $\frac{1}{4}$	29.3	Clear
2.52	155	149	220 Sp.	-26	29.3	
4.15	153	170	223 Sp.	-23	29.3	
5.42	149	189	225 Sp.	-19 $\frac{1}{2}$	29.3	
7.20	144	108-210 Sp.	207-39 Sp.	-15	29.3 $\frac{1}{2}$	
8.05	130	110	199 Sp.	-15	29.3 $\frac{1}{2}$	
9.40	130-27 Sp.	107-12 Sp.	192-37 Sp.	-12	29.3 $\frac{3}{4}$	
9.46	131	175	225-30 Sp.	-10	29.3 $\frac{3}{4}$	
10.37	132	125	203-08	-10	29.3 $\frac{3}{4}$	At 10.45 Aurora visible here
11.00	127	107	193-7 Sp.	-10	29.3 $\frac{1}{2}$	



Mean average of records on AX taken on five comparatively quiet days in August, 1951.

The vertical bars on the curve indicate times at which strong pulsations were noticed followed by a sharp rise for the day and a fall at night.

At night only a few observations were taken.

GENERAL CONCLUSIONS

Whatever may be said about the theoretical principles which have led to these experimental results, it is quite definite now that new facts about magnetism have been discovered. The existence of an east-west magnetic polarity (an assumption fully justified by the observations); the, at least three, axes of any magnetic bar; the fact of this "something" which was called Etheroid and which impregnates the surrounding medium of the magnetic core; are definitely interesting phenomena and support the hope that a convenient method of detecting and verifying the existence of the non-potential field of the earth may be found. They may well be the cause of opening a new chapter of Science.

I would like to express my great thanks to Mr. J. Dresser, M.Sc., for his valuable suggestions made during long hours of discussion, and to The Fundamental Research Centre for encouraging me to write this paper and for their promise to help by submitting it to the scrutiny of better brains than my own. The more searching the criticism, the more grateful will the writer be, for only by the rigid rejection of all doubtful claims will the complete truth be finally established.

NOTE.—I wish to thank Mr. J. Cecil Maby, B.Sc., A.R.C.S., F.R.A.S., of the Biophysical Laboratory, Burton-on-Hill, Glos., for very kindly showing me a number of graphical records (as yet unpublished) of his own, made with a new form of electrometer on which he has been working during the past seven years, and which he has now nearly perfected in several different forms suited to geophysical, meteorological and other uses. This valuable corroborative information, which also appears to confirm many of the results obtained by Sir George Simpson, K.C.B., F.R.S., as given in his paper *Atmospheric Electricity during Disturbed Weather* (see ref. 26) was only made available to me after the present paper had been written. Mr. Maby has, however, agreed to this brief reference to his own unpublished work in view of the fact that the latter is evidently closely correlated to my own observations described above, as well as to those of Sir George Simpson, although quite different instrumental methods were applied to each case. Mr. Maby has, in fact, independently accumulated a large body of highly significant data in relation to meteorological and geophysical disturbances by means of his new instruments (provisionally termed the *radio-electrometer* or *radionic-polariscope*); and it is to be hoped that his results and specifications will be published in the near future. He tells me that the delay has been due to post-war conditions, plus a desire first to perfect the technique as far as possible and to endeavour to fit these novel data into the framework of classical physics.

APPENDIX

If an electric field is moving with a certain velocity, say, v , then with it is associated a magnetic field of strength proportional to v/c , where c is the velocity of light. This magnetic field is "observable by an observer at rest relative to the earth's surface, and the field strength is proportional to the relative velocity of the charges with respect to this observer." This has been demonstrated by a series of experiments conducted by Röntgen, Rowland and Eichenwald, and confirmed later by H. A. Wilson and W. Wien. These experiments have shown that it can, in fact, be written,

$$H = \frac{E v}{c} \dots \dots \dots (1)$$

when E denotes the electric field strength and H the magnetic intensity in gauss. It can be seen that we have here an effect of the first order of the motion of static electricity with respect to the magnetic field. However, if the observer himself shares the motion of the charged condenser it is impossible for him to demonstrate the magnetic field produced by the motion of this charged condenser. We have to add here that the direction of motion v , is at right angles to E and H .

From this very brief description interesting conclusions can be drawn in regard to geophysical problems. It is well known that, thanks to the electrical potential gradient of the earth, there exist at least about one million volts—if not much more—of potential difference between the earth's surface and the ionospheric layers at great heights. Hence the earth's surface and the ionospheric layers can be visualised as two plates of a huge rotating spherical condenser separated by a dielectric, the air, though this becomes a good conductor at great heights, especially in the layers concerned.

On the basis of the experiments described above, the magnetic field produced by this moving condenser would correspond to the given equation. Substituting for E the million volts of PD, and putting c and v , both of which are known, in centimetres, we at once get a fantastic magnetic field, which, however, would be unappreciable by any observer moving with the earth, or, in other words, sharing the motion of the charged condenser. As already stated, only the relative motion with respect to the observer produces an observable magnetic field. Nevertheless, we can easily conceive the observer

on the earth's surface as being in the sun's electric field, however minute it may be, and, relative to this field in which the observer is definitely standing, the differences in the earth's magnetic field would be observable. Therefore any changes in the sun's electric field such as are caused by electric particles emitted by solar outbursts in flares and sun spots, would definitely produce an abrupt change in the observable magnetic field of the earth. This can actually be observed. Further, from equation (1), it is seen that any changes in the earth's spin velocities would also produce a change in the observable magnetic field of the earthly globe. This again has been found lately (N. Stoyko : Sur la variation du champ magnetique et de la rotation de la Terre ; *Comptes Rendus* of the Paris Acad. Sci., vol. 233, p. 80-82, 1951 ; comp. vol. 234, p. 1798-1800, 1952 ; by the same author).

In order to calculate the earth's observable magnetic field from this standpoint we have to divide the general equation for rotating condensers (as in (1)) either by the electric field of the sun, which is an unknown quantity for us at present, or by the sun's distance. Both should, for obvious reasons, be quantities of the first order, as the square of the distance cannot be taken into account in this case. Putting therefore in rough terms one million volts for E, for c and v the velocity of light and maximum spin velocity of the earth, and the distance from the sun in centimetres we have

$$H = \frac{10^6 \times 3.10^{10}}{5.10^4 \times 1.5.10^{13}} = 0.04 \text{ in gauss}$$

which is about 1/15 of the observed magnetic field of the earth, a result which is definitely interesting. It is not improbable that the term 10^6 in the equation is, in fact, 10 - 15 times higher. We would then have the solution of the mysterious problem of the existence of the total magnetic field of the earth. Whatever may be said about the suggested approach for calculating the observed field, there is no doubt that the general idea of the earth being a rotating condenser cannot be disregarded in geophysics. Taking this hypothesis into account, let us now proceed to the problem of the vertical earth-air current referred to in the paper.

Suppose that in a plate condenser laid down horizontally, the upper plate, instead of being made from an ordinary metal sheet, is of a dielectric nature provided with several parallel rows of metal nails inserted in it. These nails will be charged with varying electric charges so that a PD will exist not only between separate rows but also between separate nails. If now we move this upper plate horizontally, or even vertically, relative to the lower plate which will be an ordinary conductor, then a variable electric charge will at once be induced in the lower plate, and as the nail plate is moved a displacement current of Maxwellian type will result in the dielectric medium, that is, the air between the plates. Owing to the potential difference between the separate nails in the upper plate the displacement current will vary from place to place. Hence the magnetic field induced by the displacement current will also vary from place to place.

Now, from ionospheric soundings, we know that there exists a well developed, so called, cloudiness of charges in the ionospheric layers which are usually moving in a horizontal direction (apart from daily vertical changes) at a rate of up to several hundred miles per hour. This will evidently induce at the surface of the earth's crust a charge varying from locality to locality, inducing currents in the earth's crust, finally giving rise to displacement currents in the air with variable magnetic fields differing from place to place of short duration. As the particular charge clouds in the ionosphere cover comparatively small areas (28) and their velocity is up to a few hundred miles per hour, in proportion to the velocity and area of the charge-clouds the average time of the changes of the displacement current should amount from a few seconds to a few minutes or more. This will apply also to the duration of the variation of the magnetic field's intensity and direction in respect to the electric currents, which may be upwards or downwards. This again is what is actually observed

in the so-called micropulsations of the magnetic field of the Eschenhagen type. Their duration is from a few seconds up to a minute or so and differs from place to place. The Dynamo Theory (Balfour-Stewart and Schuster) now generally accepted is not capable of giving a reasonable explanation for these short duration pulsations.

On the contrary, it is believed that, by what I call the Condenser Theory these facts can now be fully appreciated. In addition they account for the existence and nature of the vertical current and supply the link between earth currents and storminess at great heights, as well as magnetic field disturbances. Finally they give a reason for the strong deflections of the vertically suspended magnetic needle, as described above. There is one other thing which may arouse interest. The vertical current will evidently have a mechanical effect on the air molecules in accordance with the well-known laws of classical electrodynamics. It will also follow (upwards or downwards) the path of least resistance (extremum) and hence a spiral path.

Such currents existing over a larger area of the earth's surface, may well be responsible, to a certain degree at least, for cyclones and anticyclones (by summation). They will have different values from place to place and will account for the lately observed link between the meteorological and ionospheric conditions, as well as for wind directions. These ideas were foreshadowed by Balfour-Stewart (see (9) of this paper), and also fit in well with Dickson's observations on Ben Nevis made long ago, as well as with results obtained in later researches (9).

Now from the vector analysis of classical electrodynamics we know that if the cartesian co-ordinates x and y correspond respectively to the electric and magnetic vectors, then the mechanical or pressure side follows the z axis. In the so-called Dynamo Theory the mechanical oscillations of the air (barometric daily variations) are responsible for the daily magnetic field changes of the earthly globe (see note (19)). In the Condenser Hypothesis, the process is reversed. By this it is meant that any changes in the motion of the spin and orbital velocities of the earth relative to the Sun (or differences in the sun's electric field as described above) will induce corresponding changes in the magnetic field of the earth, and hence also in the electric currents in the ionospheres. It can then be seen that such changes will immediately produce a mechanical effect in the oscillations of the air in vertical directions enhancing also electric and magnetic effects as the Dynamo Theory tells us. Hence, supposing that $1/15$ th of the observed magnetic field of the earth is due to the fact that the earth is a huge revolving spherical condenser, then the air oscillations of daily barometric variations will also be due to electrical forces, and will play a component part.

It is unnecessary to say that further implications of the Condenser Hypothesis are of definite interest in geophysics.

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B.S.D. RECEPTION, 1953

Members and their friends to the number of about 100 were present at 11 Chandos Street on the afternoon of April 15th. There was an embarrassing excess of friends over members with the result that the gathering assumed a different character from that intended, namely, an opportunity for discussion between people sharing the same interests.

As it turned out most of those who came—and some arrived before 3.30—did so in order to hear Mr. de la Warr's interesting talk and to see his unusual lantern slides, so that till 3.45 when tea was served many people were sitting in bored and silent expectation.

Mr. de la Warr, assisted by his wife and Dr. Corté, had very kindly gone to a great deal of trouble in making arrangements for entertaining our guests, and most of those present must have been considerably impressed.

His address was in the following terms, and a plate shewing eight of his slides is appended.

THE PHOTOGRAPHIC DETECTION OF COSMIC RADIATION

Ladies and Gentlemen,

Some of you present here to-day will be familiar with the work we have been doing in the field of Cosmic Radiation but for the benefit of those who are strangers to it I will commence with a brief outline.

It is an accepted tenet in science that when matter absorbs energy in some form or other it may be partly re-emitted as radiation. We have been able to show that there is actually a waveform of radiation which is specifically related to the shape and chemical structure of the radiating body. A technique has been applied enabling these radiations to be detected photographically.

It would appear that this radiation is of an extremely fundamental character and is associated with the source of life itself. I will demonstrate how the radiations from a seed, for example, can be photographed giving three dimensional forms of the various stages in the life cycle of the plant before the seed has germinated.

Now I am afraid I must insist on using the term Cosmic Energy because it accurately describes the source of this energy but it must not, of course, be confused with cosmic rays which are only a part of cosmic energy. Some of you will prefer to call it Universal Mind rather than Cosmic Energy and I think I would agree with you because our process requires that, before we can photograph these radiations, we first have to cause them to

manifest. What we then photograph are charged particles making up a complete waveform and, if you can stand it, I should like to describe the process as one of transforming Mind into Matter.

To illustrate this I will now show you slides prepared from our Mark I Camera and deal with Plants first.

[Slides were then shown as described below. Eight of them are reproduced on the accompanying plate.]

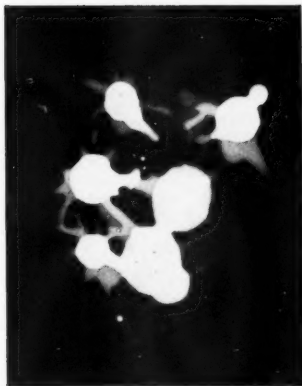
Plants

1. This is taken from the seed of a lily when we tune the Camera to detect the "flower" part of the life cycle. It is an old photograph and was taken in 1950—no doubt we could do better now.
2. This is taken from the same lily seed but with the Camera tuned to detect the bulb and early growth part of the life cycle. The dark spots show its potentiality for fertility.
3. This is taken from a horse chestnut with the Camera tuned to detect the earliest part of the life cycle. We see the dark fertility spots again but this time more advanced. There would appear to be a fertilisation process under way as the small force fields are becoming attached to the larger ones. The next slide completes the picture in this respect.
4. This is taken using the same horse chestnut but with the Camera tuned to detect the flowering part of the life cycle. The dark spots have now "amalgamated" and form the nucleus of future flowers.
5. I have brought this slide along to show you how these energy patterns can be used to good purpose. It is a photograph of the radiation from a bottle of Aconite 2x pilules. I am sure that all Homoeopathic Practitioners will be delighted to have visual proof that there is energy in the minimum dose.
6. This is taken from a bottle of Dr. Bach's Honeysuckle preparation. These remedies are, I believe, obtained by floating blossoms on clear water and exposing them to filtered sunlight. This photograph is taken from a dilution of the "potentised" water.

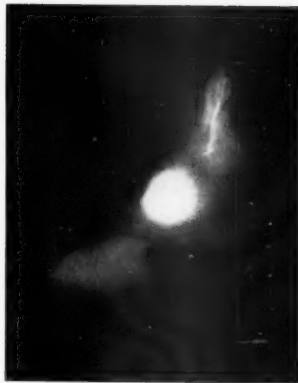
We now come to the animal force fields which are photographed by means of the patient's blood or sputum specimen with the Camera tuned to detect each specific condition. The patient can be in China and it makes no difference as long as he keeps still while the photograph is being taken. It must be clearly understood that we do not analyse the blood or sputum specimen but merely use it to identify the patient's tuning. Evidence of



Plants 3



Plants 4



Veterinary 16



Elements 24



Medical 7



Medical 14



Medical 11



Medical 12

this resonance factor between the patient and his blood specimen or between the plant and its leaf will be demonstrated later.

Medical

7. This is a photograph taken at Oxford of a man lying in a London hospital. We used a sputum specimen and the Camera was tuned to detect "Tuberculosis of Lungs." The disease radiation always shows darker than the organ radiation and the more advanced the disease the darker it shows on the negative.
8. This is a photograph taken at Oxford of a woman in bed in Yorkshire. We used a blood specimen and the Camera was tuned to detect "Buerger's Disease in the posterior tibial artery."
9. Multiple Ulcers of Duodenum showing stitches of a previous operation that have become septic.
10. This is my own bronchus taken by means of the blood specimen.
- 11-12. These two photographs were taken of a hospital patient who was in great pain and who suspected he had cancer. Slide No. 11 was with the Camera tuned to detect Carcinoma of the Stomach and slide No. 12 was when re-tuned to detect Ulceration of the Stomach. The extreme selectivity of the Camera is clearly seen and the tendency to Carcinoma is clearly indicated.
13. $3\frac{1}{2}$ months foetus taken by blood specimen whilst the mother was several miles away.
14. Rheumatism of Heart. Presumably there are also rheumatic nodules on the aorta.
15. Ulceration of the Stomach. This was verified by operation.

Veterinary

16. This is a photograph taken at Oxford of the stomach of a cow at Newbury, 40 miles away. The Camera was tuned to detect "Foreign Body in the reticulum of the Stomach" using the blood specimen. It turned out to be an iron wire and a stone.
17. To corroborate that it was an iron wire we tuned to "Iron wire in reticulum of stomach" and it will be observed that the stone will not respond to this tuning.
18. Normal photograph of Iron Wire and Stone as removed by the surgeon.
19. This photograph was taken the day after the operation with the Camera tuned as for slide No. 15. "Foreign body in reticulum of the stomach."

Elements

I have included some slides of the radiations from molecules. Each element emits a radiation on its own Fundamental Ray

which is individual to itself. I regret I cannot reconcile these with the Fundamental Rays detected by Mr. Maby by other means.

20. Copper Sulphate Crystal.
21. Key to Elements in Copper Sulphate Crystal.
22. Oxford Tap Water.
23. A Spa Water.
24. Alum Crystal.

That concludes the references to our Mark I Camera but we thought that you would be interested in details of a very interesting basic fact relating to this work. I refer to a simple little B.S.P. Apparatus—or Blood Specimen Patient Apparatus—that we have developed as a stepping stone to this sort of work.

It is evident that we have discovered an underlying basic principle governing cell life and shown an interdependence with the magnetic field of an extremely fundamental character. If I sit facing North and my blood specimen on a piece of filter paper is placed in the B.S.P. Apparatus, it will be found that under certain conditions a fogging of a photographic plate will occur.

[Five slides were then shown to illustrate the apparatus itself, which embodies a vertical bar magnet at the centre of a small rotating table, and the relative positions of the subject, the apparatus with the bar magnet and the blood spot.]

The striking thing about this phenomenon is that unless the patient sits facing the correct direction there is no fogging of the plate. We have reason to believe that the reaction via the blood specimen is a spontaneous manifestation of Cosmic Energy at that point in space and that there is no spatial wave between the patient and the apparatus. Of course, the blood specimen and magnet have to be correctly related but this is determined with the aid of the Portable Detector. The same experiment can be carried out with a plant and the leaf of that plant by substituting the plant for the patient and the leaf for the blood specimen. This gives the same sort of photographic reaction as for the patient and his blood specimen and establishes the existence of a resonance factor between the plant and its leaf *and*, we believe, between the plant and a greater source of energy, because when the plant is dug up and rotated the phenomenon disappears. Which brings me to my last point of interest.

We have found that if a plant is removed from the ground and placed in a pot there is a particular rotational position at which it gives "resonance." Furthermore this position coincides with the plant's original position in the ground. If we take the plant to a dark room and place a photographic film above it we get a dark patch in one particular spot as long as the plant is correctly placed for resonance. This, we think, is the Funda-

mental Ray of the plant sustaining life in that plant rather like a lifeline. Considerable work has been done at my Laboratories on these aspects of Cosmic Radiation but there is much yet to do especially as far as plants are concerned. Our main efforts over the past ten years have been directed to the medical applications of these fundamental facts and I regret that time is too short at a pleasant gathering of this kind to deal adequately with the subject.

A new type of Infra Red Radiation Lamp was then displayed. These lamps embody the new principles briefly referred to earlier in the proceedings. It consists of an infra red energy source and an element, for which a patent has been applied, which is tuned to give specific treatment to any cell group in the body. In this case the element is preset by a process of resonance tuning to treat the bone marrow and the muscle fibres and also radiates an antidotal waveform to the fibrositis radiation. No skill is required in the use of this lamp. Interchangeable elements are being tested out for certain other diseases.

AUTOMATIC DETECTION

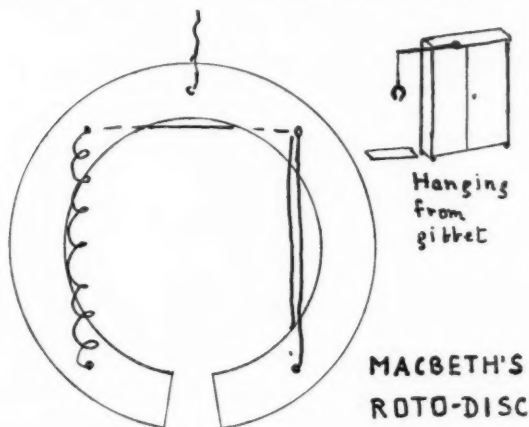
BY NOEL MACBETH

The movements of a paper cylinder, free to revolve about the vertical axis, have for long been a subject of discussion. A demonstration of this phenomenon was given to our members by Lord Dowding on April 11th, 1945, following which exhaustive experiments were carried out by Mr. J. Cecil Maby. A special apparatus combining the movements of the cylinder with those of a pendulum, designed by Dr. Ash with the help of Mr. R. Insull, was described in the March number of *Radio-Perception*.

Readers who are interested in this sort of thing may care to experiment with a very simple revolving ring of my own devising where the influences of one's hand pass to a combination of paper and a metallic coil. They may be interested also in repeating the experiment of Soulier, a French chemist of 30 years ago, who obtained pendulum motion when the thread suspension was more or less rigid through being attached to the spout of an inverted glass cone-shaped filler.

In the first case a piece of cardboard supplies an 8in. diameter ring, the ring itself being 1in. wide. A slit is cut to provide an aperture of about 1/3rd inch. This ring is then suspended by a silk thread from a walking stick used like a gibbet, extending from the top of a tall cupboard. It is better to have a sheet of iron a foot or so beneath this ring. The ring itself must now be

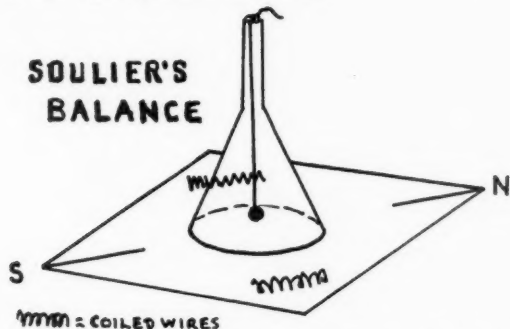
given greater absorption power by the attachment of a length of wire, say some telephone copper wire from which the cotton cover has been removed by burning. Take a length of 80 cm. (32in.) and wind half of this round a pencil used as a "former." This will make a coil of only a few inches length, with the remainder as straight wire. Make holes in the cardboard disc at the corners of an imaginary square. By these holes connect the coil so that it is upright on one side of the ring which has the aperture at the bottom; and now pass the straight portion of the wire through the two remaining holes, passing the wire up and down the other upright side to utilize all the wire. Thus the wire assumes the form of a square-angled horseshoe with half the wire a coil and the other half acting as a primitive condenser. It is in fact an elementary open circuit, and the length of the wire employed



provides some relationship to the 80 cm. field which corresponds to the human nervous system on the Turenne 150 cm. Rule. This appliance, when suspended, gradually absorbs more and more of the human "odic" force, and goes into motion by revolving in directions corresponding to the hand brought near it, showing that the movement is not due to heat convection. Children experimenting with this ring of mine have declared that they obtained a prickling sensation on placing a hand inside the ring. Dowsing sensitives feel the same, and a correspondent in Germany has declared that he can make the ring revolve by looking at it across the room just as one finds for a de Tromelin cylinder. My device has been called "Roto-Disc."

The semi-automatic pendulum arrangement of Soulier is made as follows: A little brass ball is suspended from a thread which

is held in position at the top of the inverted glass filler by pressure of the operator's finger. The operator must evidently be able then to impart certain initial vibrations to the suspension, and also he will be adding some of his "odic" force. This combination of pendulum and supporting filler should be placed at the centre of the drawing of a square, its undrawn diagonals magnetically orientated. The pendulum assumes motion when products containing the same constituent material lie at the corners of the square, north and south.



This simple apparatus was the origin of the diagnostic "Balance" employed by Dr. Nebel, of Lausanne. It was also the instrument from a study of which came into being the very valuable diagnostic balance evolved by the late Dr. Naret, of Thonon. People interested in the Naret method can obtain further information by writing to me.

TWO MORE DESERT DOWSERS

BY GASTON BURRIDGE

JOHN KLEMM'S LOOP

John Klemm has been dowsing water wells for about 40 years—oil, for over 20 years. He is 78 but dowsed 20 water wells in 1952. Klemm was a farmer, has been retired for some time. His first water well dowsing was for himself, on his own land, when he began to farm in California. I asked him how many water wells he had dowsed. He had no idea. It is a great many.

Klemm uses an interesting "loop" as an indicator. I have never seen one like it used by any other dowser of the nearly 100 I know of here in the south-western part of the United States. I thought other members might be interested in hearing about it.

Mr. Klemm came to build this loop because the ordinary forked stick broke in his hands before he could get over the water, thus he was never sure just where a location was with that sort of indicator. He has used this loop for about 20 years. It has had several predecessors.

He tells me he has found only one other dowser who could use his loop—but says he can use any other sort of dowsing instrument he has ever seen.

Klemm uses this loop for locating water, oil or minerals, holding a sample of what he is dowsing for in his right hand. He determines depth by counting the dips the loop will make as he alternately grasps hold of and lets go of the left handle of the loop—then multiplying this number by two. This product will give the number of feet to the top of the vein or pool.

This loop consists of a "V" of heavy steel wire about 18 inches long (not quite $\frac{1}{2}$ meter). Its wire is about 1/8th inch in diameter (.125). The apex of the "V" is more rounded than angular so perhaps the loop is a modified "U" rather than a "V."

At the outer end of the legs of the loop the wire is bent outward from them at right angles, to form sort of handles. These are pressed into two bearings each—which bearings in turn are pressed into two pieces of steel tubing about an inch in diameter (not quite 3 centimeters).

Over each of these steel handles Mr. Klemm has another tube of thin bakelite. These bakelite tubes fit the steel tubes snugly. (Bakelite is an artificial resin produced from phenol and formaldehyde, which can be moulded into different shapes and is extensively used commercially as an electrical insulator and dielectric).

The left handle of this loop is entirely free to spin in either direction.

In the right hand handle of the loop Mr. Klemm has affixed a coil spring, one end of which is ridged to the loop in the bearings, the other end attached to the steel handle. These attachments are *inside* the steel handle. This allows the handle to be moved freely only about two full turns each way.

Also attached to the right side of the loop is a metal cup in which Mr. Klemm used to place the bottles containing the sample, or activator, for which he is dowsing. He does not use this cup any more, preferring to hold the activator bottle in his right hand.

To use this loop Mr. Klemm holds it with the turn of the "V" standing up and resting against his chest, his hands clasping the handles, palms held downward. Then he winds tension into the right handle spring about half a turn. This places close to one pound of pressure against the *forward* and *downward*—or dowsing action—of the loop—and also against the loop *falling* forward by any gravitational pull.

With his right thumb Mr. Klemm presses against the leg of the loop to hold it perpendicular to the ground being dowsed, rather than allowing it to lie back against his chest while in use. It is held out in front of him as a forked stick is held.

As Klemm walks toward that for which he is dowsing, the loop turns down—away from him—towards what he is searching for. When the loop has made a 180 degree swing Klemm is directly over his quarry. As he walks past this spot—or backwards from it—the loop again turns upward in the reverse direction from which it proceeded downward—describing only half a circle. If the vein is very narrow—like a water main—the loop's action is very quick and decisive and he needs watch out that the end of the loop does not fly in his face!

At first, the action of this loop baffled me greatly, for here, seemingly, was a demonstration of dowsing which contradicted the generally accepted theory that the dipping action of the indicator came through unconscious action of hand and arm muscles activated through the forces of the subconscious mind. As there was no possible *direct* contact here between the loop itself and the hands, and as there was nearly a pound pull of the spring against the forward and downward action of the loop, it seemed possible to me that in this case, at least, there was reason to look for other activation of the loop.

However, further observation has convinced me that my first supposition was in error and that Mr. Klemm's loop *is* activated as other forked sticks, pendulums and rods are—but I must confess it is by such use of these forces as to be beyond my present power to describe.

I asked Mr. Klemm why he used the bakelite coverings for his handles and he replied that if his hands rested against the steel handles directly he would be attracted to iron rather than what he might be searching for—that the bakelite seemed to screen out the attraction for iron or iron components.

If Mr. Klemm is looking for natural gas or a gas main, he places an inch wide ring of copper near the thumb side of the *left* hand handle and rests his thumb against this during the dowsing process. Just how this band of copper functioned in the case of gas dowsing I was unable to determine.

LADY OF THE DESERT HILLS

In my ramblings over the south-western desert country of the United States I have come to know of nearly 100 dowsers. Of these only five—so far—are women. Mrs. Della Truax, of Victorville, California, is one of these five.

In the shade of a cottonwood tree or drilling rig, sometimes on a vine-covered porch or beside a pleasant fireplace, I have heard several interesting stories about dowsers who discovered

they had dowsing power—have practised it successfully a time, then found they lost the ability as a result of a major injury or sickness—often never regaining the facility—sometimes only partially regaining it.

I recall the first such story I ever heard. It was told to me by Mr. Milton Teener, of Threepoint, California, a dowser most successful in mineral location for more than 20 years. Mr. Teener's story was of one Bill Barns, a carpenter, who had dowsing ability and used it for water locating work. Barns cut off all the index finger and half the second finger of his right hand in a power saw accident. After the wound was healed Barns found he could no longer dowse and though he tried all the rest of his life—which was of considerable more years—he never again re-acquired the acumen.

Mrs. Truax learned, as most dowsers I have met found, she had dowsing ability by seeing another dowser work and wondering if she could do it also. She tried with a willow fork and to her delight saw it bend for her. Thus began an interesting career of dowsing water wells in the 2,500 to 3,500 foot elevation of the desert hills and plains around her home.

Since 1938 Mrs. Truax has been in a responsible office connection with the Victorville County Water District. Three of that district's own water wells are from her locations, which, in this country, speaks highly for the respect tendered this dowser by her superiors.

Since 1948 Mrs. Truax has dowsed 67 water wells. All of those that have been drilled have proved as predicted. Most of her locations have been drilled upon but some most recent ones have not been bored as yet, their owners waiting for drilling facilities.

Mrs. Truax had been dowsing about two years when, suddenly, she lost her ability. She had had no accident nor illness of any consequence nor any emotional shock of proportions, but her forked stick would no longer work for her. She tries many times and was unable to make the fork perform. This brought her great disappointment for she enjoyed her dowsing greatly and the opportunities for outdoor work it afforded.

In discussing this sad situation with friends sympathetic to dowsing, they suggested she try the wand or rod, rather than the fork, and see if, by chance, such might work for her. To her delight she found a small diameter brass rod would "bob" for her and so once again she was with means to locate underground water. Of course, she had much to re-learn about the rod's action under different circumstances, but it has proved as efficient a means in her hands as the forked stick ever was. She has never regained her facility with the forked stick—metal or wood, "green" or dry. Naturally, she wonders why. I could not tell her.

Mrs. Truax has dowsed some deep wells. These have been proven. Her deepest proven well is 652 feet. She missed the depth by less than a foot. She can locate both vein water—water which is moving—and water in subterranean pools (known in these parts as “quiet” water. She determines her depth by counting the “bobs” of her stick—each bob being one foot for her. She also determines gallonage in the same manner, each bob indicating one gallon per minute of flow.

Mrs. Truax is interested in “map dowsing” and in “long distance dowsing,” and feels she can develop herself along these lines to a point where the ability will be of definite asset to her water locating work. She is also interested in developing herself toward locating oil, minerals, buried treasure and lost persons, but does not do anything along these lines on a commercial basis.

At first Mrs. Truax used “samples” or “affinities” or “activators,” but says she is finding “mental ones” are serving her well at present.

REPORT ON SOME WELLS IN CALIFORNIA

BY V. L. CAMERON

December 2, 1952.

For more than two months Mr. Kenneth Hittle, a driller of El Cajon, formerly the Butler Company, has been drilling a well for the big Fletcher Company, developers of several great new housing projects around San Diego and vicinity, one of them the beautiful Fletcher Hills, north of La Mesa. Towards the last we have all been sweating blood, since at 470 feet the well only produced two gallons per minute, and still the instruments which I developed and have been using for many years indicated a great deal of water still deeper. The well is almost all the way in virgin or blue granite.

When I requested them to change over to the 3in. diamond drill and go on to 800 or 900 feet it was a great test of faith on the part of the Fletchers, but they evidently had it since immediately after I located the well some months before, they began the construction of 208 new houses in another subdivision stretching between North Broadway to near Highway 80, at El Cajon.

The well was continued to 850 feet, and today Mr. Hittle called me with the glad news that the well had been pumping for four hours and the water refused to go lower than 160 feet while pumping 300 gallons per minute, and practically all of this is from the 3in. hole in the bottom of the 8in. and coming from below 470 feet where it showed with the instruments to have contacted only two small springs in the vicinity of the well, and after drilling only 75 feet more with the 3in. diamond drill

the instruments indicated that at least a dozen more springs had become activated within a few feet of the well.

This opens a new era in water development, as it furnishes the clinching proof of something I began to suspect a year or two ago; that is, that since this well is drilled directly into what the instruments indicate to be an earthquake fault 400 feet wide, containing no moving water down to 470 feet, water can be obtained at lower depths in large quantities in all earthquake faults, which are numerous all over the world. As the water is coming directly upward from a steam zone of very high pressure at a depth of about three miles, it is only necessary to find these faults, and to drill a combination hole to a depth of 200 or 300 feet, so as to have an 8 in. or larger diameter hole to below the hydrostatic water level which usually comes to between 10 and 100 feet of the surface, and then to continue on down with a diamond drill of smaller diameter, depending upon the quantity of water required. Furthermore these can be drilled every 200 to 400 feet along the fault without impairing each other.

Mr. Hittle is building a very large, heavy, diamond drill rig with which he will be able to drill 6 in. holes and take cores up to 20 feet long in the hardest rock on earth. A 6 in. hole will admit four times as much water as a 3 in., and since we know the 3 in. will do 300 gallons a minute or more, this permits the development of large irrigation wells in places where the granite comes entirely to the surface of the ground. Since the steam zone at three miles down (16,000 feet) is around 7,000 pounds per square inch, according to my estimate, it puts a very high pressure on the upcoming water after it condenses into hot water and then cools on the way up, and the quantity is, you might say, only limited by the quantity of water in the oceans and lakes which overlie active or open faults which lead down to the steam zone, permitting replenishment of the steam which escapes as pure water, since steam cannot carry minerals. Of course, this is a novel and unorthodox theory first promulgated by myself around 20 years ago but of which I have unlimited proof.

About seven years ago Colonel Ed. Fletcher undertook to develop water by a well on an 1,800-acre piece of ground he had been unable to sell or use, as it was out of the water district and the Water Company refused to supply any water to it. The Army had leased it at one time and used it for an encampment, leaving some barracks buildings on it when they reverted it to the Fletcher Company. Colonel Ed. wanted to get domestic water for the use of some renters in the barracks about 1945, so he engaged the Triangle Drillers (Lester Purer, of Escondido) to drill a well on it, and engaged me to locate it since I had located a fine well just below which supplies the El Cajon Meat Packing Plant with abundant good water. I had had a chance on that

one to correct my depth findings, since it had not struck water until 374 feet though the water immediately rose to 70 feet of the top. So I told Fletcher to go to 520 feet, but at 516 feet it showed only four gallons per minute, and looked pretty discouraging. But Colonel Ed., who is a brave man and likes to play hunches, said he had a hunch about 525. At 521 feet it tested more than 50 gallons per minute, all the water they needed at that time. He then asked me why I couldn't get him an even larger one to supply a lot of houses, which I set out to do, staking one a little lower down the slope. My recommendation was 536 feet depth, which is where it was stopped. Incidentally this well, as all those in this particular area, are in hard virgin or blue granite at from around 100 or 150 feet on down.

Many years ago the papers carried an announcement by some local drillers in that area that they had drilled through the bed granite and found a large supply of water, around 200 gallons per minute, below it. This cannot be done as the bed granite is estimated to be about 15 miles thick and molten magma is below that. What they did was to encounter one of these seams, or faults, carrying high pressure water, but they had no idea where it came from.

This Fletcher No. 2 well was drilled 8 in. diameter to a depth of 536 feet, through hard granite from 150 feet on, and I was told that on test pumped 200 gallons per minute with a one foot drawdown.

Four years later this well was still pumping continuously into the water company's lines and had only been shut down once for a few hours in more than two-and-a-half years.

Since the No. 1 well continued to furnish 50 gallons per minute continuously, this water was used to supply a fine new subdivision on the property which was begun right after No. 2 was drilled.

I located another farther out along North Broadway on the same property which was discontinued at 200 feet and, owing to drilling difficulties and some error on my part, only made a windmill well. Then I located another across Broadway from it which pumped more than 220 gallons per minute with a depth of 470 feet.

Another was drilled high on the mountain right above El Capitan Dam north of Flinn Springs. From just a few feet above this well one looks down many hundreds of feet on top of El Capitan Dam. It fulfilled expectations, pumping 150 gallons per minute for most of five hours on test, finally settling down to about 75 gallons, continuous output, after several months, and it is now supplying a bulb farm on the hill with irrigating water.

Stephen F. then sponsored the locating of a well for the Boy Scouts at their Summer Camp above Lake Cuyamaca. According

to my predictions they would have all they could use at 200 feet. About 15 gallons per minute of muddy water was shut off at the surface, and no more was encountered until 196 feet. Commander Olds was very much worried until at that depth the water suddenly went over the top in a steady artesian flow, and the well easily supplies the 25 gallons per minute required by the camp, and is still artesian after two years, when not pumping.

Some years ago there was quite a splurge in the Los Angeles papers because some men had located a similar well above Los Angeles at about 2,000 feet elevation. Most people seemed to think this was practically unheard of. As a matter of fact this Boy Scout well is 4,500 feet above sea level, and another at about the same elevation which I located for Mr. Whitney and Associates on the 91,000 acre Corte Madera Ranch, above Pine Valley, and also drilled by Mr. Hittle, pumped 20 gallons per minute from 350 feet of 8in. hole, and when drilled on down to 800 feet with a 1½in. diamond drill, produced 125 gallons a minute, 105 of which is from the 1½in. hole in the bottom.

The water stands 10 feet from the surface. I had located a previous well on this ranch about 1941 which was artesian.

Several wells at Idyllwild are at an elevation of up to 6,300 feet, high on Mt. San Jacinto. Three of them for Idyllwild flowed, and the first one for Fern Valley, which I located for Mr. Humber, at 6,300 feet elevation, stood at 28 feet from the surface (I predicted 30) and supplies 200,000 gallons a day, which is all the town needs; another one I located a year later produces even more. Then I was called back to locate for Tom Raphael at Mountain Center, just below the other five wells; it has just been completed and is a fine well. These six are all in hard granite almost from the surface. They average around 250 feet depth.

Another which I was engaged to locate for the City of Riverside was drilled to 406 feet, partly in granite, and pumps 350 inches (3,150 gallons per minute) with a 40 foot drawdown. This is 4,536,000 gallons a day.

My first well in the Borego Desert was located for an old friend, Ira Leek of Vista, distant only 150 feet from a 700 foot dry hole. It, too, was drilled to 700 feet and pumps 2,700 gallons per minute and is capable of more. This is by far the largest well in the Borego Desert; a dry one just a few feet away shows the great importance of locating by means of instruments.

The Fletchers alone have drilled close to 30 wells on my locations without getting one dry hole, though two or three have been a disappointment on depth or quantity. Two other wells are now being tested near my home (at Elsinore) which I located. They are expected to produce 800 and 1,000 gallons per minute respectively.

NOTES AND NEWS

In the last Christmas number of *Guy's Hospital Gazette* there was a reprint of an article which originally appeared in the *Gazette* in June, 1933, entitled "Some Observations on So-called Water-Divining." It described an investigation carried out by the late Dr. G. A. M. Lintott, at that time a part-time demonstrator in the Department of Physiology. It is stated that the article has been reprinted in response to many requests.

In view of all the investigation which has been carried out since 1933 one cannot but be impressed by the conservative nature of this demand.

* * * *

Farm Management (Los Angeles) of February, 1953, contained an informative article by Mr. Gaston Burridge (B.S.D.) entitled "Science or Witchcraft" in which he discusses his observations on dowzers and dowsing in California. He has been an observer for nearly forty years and knows of over sixty dowzers in the south-west. He has the great advantage of not being a dowser himself and, being therefore in a position to take an objective view, has obviously come to the conclusion that the location of water by dowsing methods is often more successful than its location by other means.

He gives an example of the finding of water by a dowser called Jerry Smith on a large ranch in California where the prospects were most unpromising. So far he has located two successful wells, the first one near a dry hole, and four others have been sited.

An editorial comment based on the opinions of geologists and engineers really contains nothing to show the superiority of geological methods over those of the dowser, and the quotation from *Water Supply Paper 416* of the American Geological Survey by reason of its obvious prejudice, is extremely unconvincing.

* * * *

In response to a request (Sept. 15th, 1952) to the B.S.D. from Messrs. Richard Turner and Son, of Bentham (Yorks.) for a water diviner to check the presence of water as shown by the geological survey maps, at the Bolton Hall Estate, Bolton-by-Bowland, the name of Mr. E. Taylor (B.S.D.), of Shotley Bridge, Durham, was given.

On February 27th Mr. Taylor wrote as follows: "I accepted this work and carried it out on September 25th, 1952. On arrival I was taken to the fields on which I was to find the water. Before my arrival there had been a local diviner who advised them to sink a well in a wet part of the field. They had then dug down about 15 feet. I advised them to leave this site alone as there was not plenty of water. I then made a survey of the high ground in three fields and found a stream running N. to S. with a fair

supply of water, which I estimated at 60 feet. I then found a supply running E. to W. which I estimated at 85 feet. I marked the place where the two streams crossed and told them they should get a supply of over 6,000 gallons per day. This survey was carried out on a very wet stormy day.

"I have now received the good news of a successful borehole to a depth of 100 feet. The soil structure was as follows : 2 to 34 feet blue clay ; 34 to 36 feet fine shale ; 36 to 84 feet blue clay dominant with fine shale ; 84 to 88 feet shale only ; 88 to 100 feet blue clay only.

"A quantity of water was found at 34 feet and again at 86 feet, one foot out of my estimate. An eight-hour test produced 300 gallons per hour of good water."

* * * *

Mr. W. G. Wright has sent us the following account of an episode which contrasts with that described by Mr. Maby in the previous *Journal* : "Only on one occasion have I ever had an opportunity of putting my dowsing to a test, which occurred during the war when the Mint had been transferred to Pinewood Film Studios, and at the same time Crown Films were being shot there. Apparently they were losing a considerable amount of water per day through their fire hydrant ring main, and although they had claimed to have had experts from the N.P.L., no one would give positive advice as to where the possible loss was occurring other than to state it was within an area of 40 yards. On the other hand I arrived at the conclusion that there was a flow from a certain point under one of the concrete roads, and the Chief Engineer of the Film Studios decided to take a chance and open up just that portion of the road. To my pleasure I had located the exact spot where a tee-piece had fractured, probably due to the heavy lorries being used by the Mint."

* * * *

A note in *Tobacco*, the journal of the Tobacco Trade, refers to the late Mr. Henry Scott, of Scott and Son, tobacconists, of Bradford. He was a keen dowser and an original member of the B.S.D. He was particularly successful in the tracing of missing people, and assisted the police in this respect on many occasions.

* * * *

As reported in the *Gloucester Echo* of February 20th, a comprehensive scheme for the supply of water to the Lench villages (about five miles north of Evesham) from a Coventry main will probably require modification. According to geologists there was no adequate supply in the River Lench area, but a dowser, Mr. Izod, thought otherwise. On his direction a borehole was sunk at the instance of the Evesham R.D.C.'s Public Health Committee and tests have revealed a yield of 55,000 gallons per day.

A short note and a picture in the *Brisbane Courier and Mail* of February 25th describes how water was located by an amateur dowser, the Rev. C. Palethorpe, ensuring a much-wanted supply for the Exhibition Ground of, as tested to date, 1,100 gallons per hour from a depth of 115 feet.

* * * *

The *Auckland Star*, New Zealand, of February 28th, reports that Mr. C. Howell, the sexton at the Taruheru Cemetery, Gisborne, has, according to a correspondent, an outstanding record of successes as a water diviner.

* * * *

A highly successful demonstration of dowsing for objects concealed inside boxes was given by Mr. L. J. Latham on the television to students of St. Bartholomew's Hospital at 8 p.m. on March 9th.

* * * *

A long article with two pictures, about Mr. Edwin Taylor (B.S.D.) was printed in the *Consett Chronicle* of March 12th. It is stated that in about 30 official dowsing operations he has met with 90 per cent. success. A recent success is referred to above.

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The *New York Herald* of March 17th states that Mr. Kenneth Roberts has written a sequel to *Henry Gross and His Dowsing Rod*, entitled *The Seventh Sense* to be published by Doubleday in June.

* * * *

An illustrated article about an Ottawa water diviner, Harold Dowles, who uses rods made from wild plum, appeared in the *Montreal Daily Star* of March 21st. It is stated that he is usually called in to find water after more orthodox efforts have failed and that since he started he has divined more than 500 wells.

* * * *

Under the unsuitable title of "Is there anything in it" a discussion on dowsing between Mr. J. Cecil Maby, B.Sc., and Professor H. L. Hawkins, F.R.S., took place before an audience of staff and students of St. Thomas's Hospital in the Home Service programme on April 14th. Most of the usual false arguments against dowsing for water, such as that water can be found anywhere at some depth or other, were advanced, but were ably refuted by Mr. Maby.

As an entertainment the discussion was probably a success, as the usual attempts at ridicule met with an obliging response, whilst Mr. Maby, in spite of the limited time at his disposal, could hardly have failed to enlighten his opponent and the audience.

An article entitled "Research into Dowsing" was published in *The Times* of April 9th and repeated in the *Times Weekly* of April 16th.

A letter to the Editor of *The Times*, Mr. Humphrey Swann, which appeared on April 14th stated that in the country round about St. Feoch, near Truro, the sedimentary rocks are so faulted and crumpled by the intrusion of the granite boss a few miles to the west, that dowsing is the ordinary everyday method of finding where to dig a well, and the only reliable one.

* * * *

The *Cornish Evening Herald* of April 14th contained a picture of Miss Catherine Bent divining water on the site of the Royal Cornwall Show near Launceston. She was wearing rubber boots, a fact commented on in the issue of April 15th, when reference was made to a dowser who found he could get no response when so shod.

* * * *

An article about Mr. J. H. Strand Jones (B.S.D.) with a picture, appeared in the *Montgomery County Times* of April 18th. The picture shows him dowsing with a whalebone rod. He has found water at several places in Carmarthenshire and Montgomeryshire.

* * * *

An illustrated article about Miss Bent, by John Stobbs, appeared in *Picture Post* of May 2nd, and in its content forms a sequel to that in the *Manchester Guardian* referred to on page 39 of *Radio Perception*, Vol. xi. She apparently works without an instrument and is subjected to severe muscular contortions in the presence of underground water, necessitating a rest every alternate day.

* * * *

Mr. Alfred Josiah (B.S.D.) states that he is employed as Electrical and Mechanical Engineer in the Military Engineering Service of Pakistan and, as such, is responsible for the water supply for the Army, Navy and Air Force in the Karachi Area. He has sent us a copy of a certificate dated May 16th, 1953, from the Executive Engineer, Construction Division No. II, Karachi;

"Mr. Alfred Josiah water diviner was engaged by the P.W.D. to show a point which would yield the maximum quantity of water in an existing, almost dry well at the Government Poultry Farm Landhi, Karachi.

"After testing, this point was marked and boring at the point was started. I am glad to testify that according to Mr. Josiah's report an abundant quantity of water from an underground spring head was made available. Although in a limited space only one source was tapped, at least 12000 gallons per hour are available.

"I strongly recommend to engage his services before starting any project for water supply to avoid unnecessary expenditure on trial bores."

REVIEWS

THE "AURA BIOMETER" HANDBOOK

See under "Books and Appliances"

Among radiesthetists in England the Bovis Biometer has always commanded great respect. This is no doubt due to the evidence of its usefulness provided by the work of Mrs. Kingsley Tarpey, Dr. W. E. Benham, and the late Dr. Oscar Brunler in particular. These three people used a "Bovis" in the early days when most people in England were more often merely "dowsers" and still knew very little about the remarkable things done as indoor Radiesthesia by the more advanced investigators on the Continent, like the various contributors to *La Radiesthésie pour Tous* or the authors of the many books on Radiesthesia. As people have learned that they can make a Rule of that kind fairly easily without knowing all Bovis's manufacturing secrets, various effective Rules of the biometer kind are now being used, but in the "Aura Biometer" of Benham one finds certain very useful innovations.

To make a Biometer of the Bovis kind it is necessary to produce by one means or another a Rule which shows for a healthy person a standing wave-field extending from his hand to a distance of 20 cms. (19.8 cms. to be exact). This result is obtained along a cotton tape in the direction of geographical North if a horseshoe magnet lying flat on the table at the tape's South end has the two poles directed North (Mellin). (Hence my classification of such appliances as "North Rules"). The result comes also from the use, as a Rule, of a narrow strip of electrically conducting metal (Dr. Michael Ash). The result is better if the metal lies along the median line of a narrow strip of wood (Dr. Benham), likewise from a narrow line in black paint in the same position (Encl).

The metal strip pattern of the Biometer in the perfected Aura Biometer of Dr. Benham is the one discussed here. People interested in this method useful for the assessment of either the human external energy field, the Aura, or the equivalent produced by a small sample of any non-living substance will welcome the offer of the Biometer in Dr. Benham's form and also of the booklet dealing with its use which has been written by Mr. John J. Williamson.

It is from the angle of psychic research that the publications of his Research Group appear to be written, but investigations based on recordings of the Aura Biometer will just as much interest the physicist. Dr. Benham's hypothetical interpretation of the effects detected and shown by angle of oscillation of the special pendulum employed are taken as being related to edges of field manifestation, assuming the sine wave pattern.

A development for which Dr. Benham deserves congratulation is the use of a probe connected by a conducting silk thread to the zero of the Biometer. This technique is of course not new as regards Rules in general (Professor Larvaron's Radiocampomètre, another form of "Biometre," employed by agricultural radiesthetists). The probe

conveys the particular influences of the test sample to the zero of the Aura Biometer if the probe lies on the surface of that sample. Then there is a practical means of finding on the Biometer the length of the field due to a sample of big dimension, not due to a single part of the test sample being touched by the probe. In the booklet here reviewed, this operation is illustrated by the reading of one part of the impregnation derived from a whole hand which has been pressed down on to a sheet of paper.

Dr. Benham's observations point out the difference between the field-effect corresponding to the energy of the person represented by his hand imprint, and on the other hand certain effects which correspond to what can be supposed to be extraneous colour-harmonic influences.

Interpretation of the influences derived from each of the phalanges and positions on the hand given in the booklet is of course what Bovis taught. By taking readings for each part of the hand one obtains a rough diagnosis of the condition of various parts of the body, palmar and digital influences corresponding to what can be detected directly on the trunk itself. When a person's thumb is laid at the Biometer zero the indications concern the brain, a thing which has been known by many radiesthetists but was stated in detail by Brunler. Dr. A. Leprince and other French writers have written on the subject of hand imprint diagnostic values.

Special results concerned with the six non-repeating readings on the Biometer are of interest. These Dr. Benham calls the "paraphysicals." The number makes me suspect that they will be found to correspond to the "h" spectral colour rainbow pattern which it is easier to detect on the Rules of Turenne or Lesourd. These are employed while being pointed towards South, i.e., with the test sample situated at a North end of zero of the Rule.

The "Lozenge" of Bovis is a diagram with its outside edge in the shape of a playing card's diamond, and inside this there are a circle and various cross lines. This composite figure is known to be a collector of the magnetic, and it will produce on a suitable diagram the effects produced by a compass magnet's needle. The effect of this Lozenge on a test sample's wave differs according to whether the greater length of the "diagram-magnet" is aligned N.S. or E.W. at the Biometer zero. Benham finds that the Lozenge accentuates the positions of the crests and the troughs of the wave pattern detected along the Biometer. This can be helpful to the operator.

Radiesthetic influences here dealt with by Biometer show their connection with electromagnetic wave phenomena of the orthodox. Biometer readings are affected by altered atmospheric conditions like those of thundery weather. This is known by users of other field-dimension measuring appliances.

One little suggestion I have to make to users of this Biometer: The "readings" may become more marked if the zero is connected simultaneously by a silk cord to a nearby central-heating radiator.

The "Auro Biometer" booklet is certainly well worth reading.

NOEL MACBETH.

LA RADIESTHESIE POUR TOUS

FEBRUARY

p. 35. E. Engel writes from Casablanca on sex determination, the antipathy of doctors to healers, and on a graphic representation of disease. With regard to the determination of the sex of a baby before birth, the writer thinks that the errors so often made result from the operator asking simply: "Boy" or "Girl." He believes it necessary to take into account the "inter-sexuals" comprising (a) Androgynous types who are anatomically male but present one or more secondary feminine characteristics; (b) Gynandrous types who are anatomically female but present one or more secondary masculine characteristics; and (c) the homosexuals in whom the opposite secondary sexual characteristics grow in number and intensity. It is suggested that a circular segmental diagram with these divisions shown should assist the pendulist in his findings. On the question of doctors *versus* healers it is pointed out that excessive numbers of doctors mean close competition amongst them and resentment against outside healers, and the writer quotes *Le Petit Marocain* to the effect that there are no less than 8,000 medical students in Paris, while at the American university which counts most—Illinois—there are only 653. In New York the five faculties have a total of only 2,000 students and San Francisco 283. If a graph is drawn showing the intensity of a disease (such as scarlet fever, for instance) on the ordinates, against its duration (in days) on the abscissae, the value of the treatment given can be closely assessed.

p. 37. W. Servranx emphasises the point that when some information is urgently required, radiesthesia often gives better results than in practice tests.

p. 39. Professor L. Keffler (B.S.D.) describes how scientists, at first sceptical of dowsing as a fact, have been convinced of its authenticity, and after delineating various tests on water flows, he tells of one spot where noxious earth rays were suspected, and where it transpired that the lady of the house had lost her grandfather and grandmother, her father and mother and a first cousin—all of whom had slept there and died of cancer.

p. 45. Pierre Bories continues his articles on foretelling the weather and recalls the importance which has been attributed in the past to seven-year cycles without, however, any solid confirmation.

p. 50. C. Dubart, a hospital attendant of Vaulx-lez-Tournai, tells how a woman was one day accused of having stolen a bag containing 2,150 francs, an identity card and keys. She came to him crying and insisting that she had not touched the bag. M. Dubart asked her to tell him how the rooms of the house where she worked were situated and the furniture arranged. He then made a sketch and with his pendulum discovered, after some minutes' work, that the bag was in the bottom of some linen. The good woman was persuaded to go and tell her employers to look again in the linen where in fact they had already searched. To their surprise and joy they found the bag and its contents at the spot indicated by M. Dubart's pendulum.

p. 51. Obtaining employment. It is said that the pendulum can be used in obtaining employment and has often been so used successfully. It will pick out the advertisements offering employment which are most likely to bring results, indicate the best time to write to the

advertiser, which qualifications or facts should be mentioned and which should not, whether a photograph should be sent, whether testimonials should be included, whether the letter should be written long-hand or typed, etc., etc.—*L.R.P.T.*

p. 53. Radiesthetic action by contact. J. Bervroux gives instances where radiesthetic action can be generated by the contact of metals and other substances, the influence being specific to certain states. It is said that a small piece of copper placed on a piece of lead makes a satisfactory witness of organic vitality (*vie-organique*); iron over copper makes a witness of nervous energy; borax on aluminium, mental power; gold on graphite or zinc on gold, vital magnetism; and lead on borax, healing power. A small piece of gold placed on the top of a corked bottle of tincture of iodine makes a witness of "spiritual healing," and it syntonises with certain waters said to have miraculous qualities. A corked bottle of tincture of iodine placed over some borax powder makes a witness of human vitality, while iron on gold is said to make a witness of sexual power. The reactions can be amplified by making a "battery" or "pile." Thus if gold is placed over graphite and above this, gold and then graphite, so that there are altogether eight pieces of gold over graphite, all placed in a cylindrical carton, one has a "veritable battery" of vital magnetism. Geometrical figures traced in Indian ink on white paper will also multiply the influence of two substances in contact with each other placed in the centre, and these figures can be chosen by pendulum.

p. 55. Water potability. Mme V. Autrique writes of water potability and of the various bacterial organisms which can infect water. She goes on to say of magnetised water that all water in the ground acquires magnetism naturally. At Brussels, town water is distributed to the houses by lead piping, and she finds at her house that it has a "wavelength" of 60 (as measured on her instrument). Water of between 100 and 1,000 bacteria per c.c. is considered pure, and this water has exactly 800. After placing the water in a two-litre stone jar for 24 hours, the "wavelength" is increased to 120. Water with between 10 and 100 bacteria per c.c. is considered to be very pure. The water in her jar has exactly 70. After being in the jar the water is magnetised and can be used curatively. It has no direct effect on the various bodily tissues, but it has on the blood and will increase the number of red blood corpuscles, improve the condition of the blood and prove valuable in anaemias. But it is contra-indicated in the plethoric, i.e., those with an excess of red corpuscles in the blood.

p. 61. Charles Françoise describes and illustrates a simple apparatus for finding the direction of an object.

p. 63. Hints for finding lost objects. Among a number of points mentioned, F. Servranx says that a description of the lost object written by its owner may be used as a witness, and the radiesthetist may even hold a cigarette paper to his temple and think of the object sought, thus making the cigarette paper a witness by means of mental impregnation. If no direct witness is available, something else belonging to the owner may be used, e.g., the gloves of the owner of a lost watch. If there are several witnesses available (including, say, a photograph and a description of the lost object), they should all be put in a paper envelope, the envelope being used as a global witness. In commencing the search, M. Servranx says, work on a map or plan succeeds nine

times out of ten. In carrying out the work one should concentrate on the object sought, but without any effort of will.

MARCH

p. 65. Marcel Perreux describes how a stencil, such as is employed with a duplicator, can be used for augmenting the influences detected in diagnosing from anatomical charts and in work of a teleradiesthetic character.

p. 67. "Sonopuncture." Referring to the article on sonopuncture which appears in the issue of *L.R.P.T.* for January of this year, Dr. Lehman gives the conclusions he has reached as to the efficiency of the sonopuncture apparatus, which he has been using since October, 1952. Dr. Lehman states that practitioners employing acupuncture have been surprised at the small number of points stimulated for the patients whose cases he reviews, but he considers that this is a condition of success. If the point to be stimulated is well chosen radiesthetically, only one will be necessary, with two as the exception. In fact the acupunctural points can be compared with homoeopathic remedies.

p. 69. The ohmmeter. André Goubet, a radio-electrician, describes a sensitive ohmmeter with which he can take measurements of radiesthetic significance. The instrument consists of a microammeter (from 0 to 250 microamps), a pocket lamp battery of 4.5 volts and two standard potentiometers as used in direction-finding apparatus, one with a resistance of 100,000 ohms and the other of 20,000 ohms. The writer says that a person who shows a resistance from hand to hand of between 120,000 and 90,000 ohms should make a very good radiesthetist, between 90,000 and 70,000 ohms a good radiesthetist, between 70,000 and 50,000 ohms a moderately good radiesthetist, and between 50,000 and 30,000 ohms a bad or very mediocre radiesthetist. Below 30,000 ohms he is not a radiesthetist at all. It can be demonstrated with the ohmmeter that different times of day, as the absorption of drugs, can affect the efficiency of the radiesthetist. And he will also be affected by fever, and will not get the best results when working in the sun or in stormy weather, for his sensitivity will be diminished—as recorded by the ohmmeter. The writer is convinced that there is a relation between a dowser's sensitivity and his electrical resistance. It is emphasised that all measurements must be made with the hands dry, and one should wait at least a quarter of an hour after washing the hands before taking a measurement. After taking aspirin, veganin, aspro, etc., sensitivity can be quickly restored (according to the writer) by masticating slowly three grains of roasted coffee.

p. 73. W. Servranx stresses the importance of not doubting your radiesthetic tests. If you repeat a test, you will generally find that the first result was the correct one. You should not let doubt enter your mind. But that is not to say that you should not check your results by a different method. After making a test some radiesthetists have used word witnesses, such as "Right" and "Wrong," with success.

p. 77. R. Richir discourses on the value of the Schüssler salts for the benefit of a beginner.

p. 81. As showing the possible influence of the thoughts of others on an operator's radiesthetic indications, Henry de France describes how, at the house of a cousin, the following experiments were made with eight persons who had not tried their hand at radiesthetic tests before. Four cards were placed in line on a table face down. Someone chose a card which was shown to those present and then replaced face down. The subject under test was then brought into the room and tried to discover by rod or pendulum which card had been chosen. Twelve tests were made and in 11 of them the operator chose correctly. Only the twelfth test failed, and this was undertaken by an experimenter who up till then had not been interested in the researches.

p. 83. F. Servranx tells of experiments which confirm that razor blades can be kept fully sharp by means of a model cardboard pyramid. He used the method described by M. J. Martial in the issue of *L.R.P.T.* for June, 1952.

p. 86. A graph is reproduced covering the years 1947-50 and experimenters are asked to complete it with the help of the pendulum for the years 1951-2. What the graph represents is not stated, but it will be next month when the graph will be reproduced in full.

p. 89. Cancer. By Mme V. Autrique. The medical publication *Guérir* publishes in its numbers 202 and 203 the claimed discovery of the origin of cancer by the Italian lady doctor, Clara Jolles Fonti, who says that cancer is a microbial, contagious and transmissible disease. After 20 years of research, she is said to have succeeded in isolating and cultivating the cancer virus. She believes that cancer is found in the human organism in the latent state and she has furthermore developed a therapy of her own which is said to have been successful. It is stated that numerous people in Italy have been cured by this treatment, resulting from symptomatic observations. Apparently Italian doctors have taken considerable interest in Dr. Fonti's claims. Following the conclusions of Dr. Fonti, Mme Autriche has come to certain conclusions herself as to the cause and origins of cancer, using radiesthetic methods. Amongst other things she does not believe that cancer is in any way connected with bad earth radiations, but in this she is disputing a great deal of evidence to the contrary. We would rather say ourselves that the evidence goes to show that inimical earth rays can be, and probably often are, a factor in the development of clinical cancer.

p. 94. C. François illustrates and describes an instrument for locating objects on the ground or in the air, with the aid of the pendulum.

p. 95. Pierre Bories continues his articles on radiesthesia and foretelling the weather.

APRIL

p. 97. Photographic witnesses. W. Servranx affirms that through photography the amateur can collect radiesthetic witnesses of many things which he could not easily acquire otherwise. Photographs of the ground taken out walking can make excellent witnesses of the terrain, of the soil and of geological features. Photographs of clouds, storms, rain, snow and ice, and of the moon in all its different phases, can be used in predicting the weather, while photographs of a train, aeroplane, ship or motor-car, etc., can be useful in resolving certain researches, such as following someone's tracks or looking for a fugitive.

Photographic negatives are entirely satisfactory. Black and white photographs are good, but coloured slides also make excellent witnesses. Think of the satisfaction of obtaining witnesses of such things as uranium or precious stones!

p. 99. The incomplete graph of sun spots published in the last number of *L.R.P.T.* is here shown completed up to the end of 1952.

p. 101. Marcel Perreaux describes how the rod or pendulum can be used at home in checking up on the health of the baby and seeing that it has the food it needs, that its cot is not placed over a bad earth-ray zone, and so on. Where a child cannot describe its symptoms, radiesthesia can be singularly valuable in looking after its welfare.

p. 103. The Association of the Sick. Following steps to form such an association in Belgium, Paul Dessart, a barrister in the Court of Appeal, describes reactions to it in France, and observes the keen interest that is being taken there by some doctors and many others, despite the restrictions on medical and healing practices, where even a doctor may only employ therapeutic methods which have been officially approved.

p. 105. Schüssler salts. It is suggested that experiments should be made in treating plants with Schüssler salts. Some untreated plants should be used as controls, and it is predicted that, following blindly the pendulum indications as to which salts to apply (in the water used for watering the plants) and in what dosage, surprisingly good confirmation will be had of the value of radiesthesia—especially as there is no question of auto-suggestion involved—as of the efficacy of the Schüssler salts.—*L.R.P.T.*

p. 106. Pierre Thouvenel and rhabdomancy. Pierre Bories recalls how Pierre Thouvenel, born in Lorraine in 1747 and received into the medical profession in 1779, popularised the thermal waters of Contrexeville and was nominated inspector of mineral waters. Though a man of science, he became interested in rhabdomancy (i.e., divining), and retained this interest up to his death. Antoine Armand, who enjoyed a certain fame about 1840, became well known for his powers of water divining. It was well known that as a young and robust peasant he was physically affected when stationed at certain points on the ground due to adverse terrestrial influences, and it was apparently as a result of this that he became a diviner.

p.110. Foretelling world events. Jacques Bervroux suggests this simple method of foretelling the future. Ask all your questions so that the answer is Yes or No, as indicated by the pendulum. If you want to know what will happen in a certain month, make a word witness of the month (e.g., July, 1953) and place it under the free hand. Then hold the pendulum over two other word witnesses of, say, Quiet or Disturbed. If the pendulum indicates Quiet, there is no need to do more, but if it indicates a disturbed period, you can ask the pendulum if the disturbance affects you personally, or world events. If the indication is personal you can go on to find out what department (or departments) of your life will be affected by using such witnesses as Finance, Health, Litigation, Travel, Human Relationships, etc. And it is easy to see how this method could be extended to tap other information required, whether personal or general.

p. 113. F. Servranx describes for the benefit of the beginner how colours can be used to increase one's dowsing sensitivity, different people having their own affinity for their own particular colour.

p. 116. Foretelling the weather. Pierre Bories concludes his articles on foretelling the weather through radiesthesia.

p. 119. Henri Meier refers to an article by Dr. Horst Sachsse of Walchstadt, Upper Bavaria, which appeared in *Der Na'urarzt* for December, 1952. Dr. Sachsse had a lesson in radiesthesia 25 years ago and has since studied emanations from the ground with his rod. Now special apparatuses have been made for measuring these radiations. A Dr. Hartman also writes that by observing animals, birds and insects, one learns that there are those which seek the radiations occurring above faults and veins in the ground, like the bees, ants, owls and cats; on the other hand dogs, storks and swallows are among those which avoid them. Thus while the stork, which settles on ground free from bad earth radiations, is supposed to bring good luck, the owl is considered a bringer of bad luck because it likes places which are haunted (we may recall that supposedly haunted places have sometimes been found to lie over a fault, or ground affected by harmful rays).

p. 123. Mineral waters. Jean Marlier maintains that the true value of mineral waters rests in the fact that they are radioactive. He says that water which derives from glaciers possesses a very high coefficient of ionisation, which enables it to disintegrate in its passage from the heights part of the soil it traverses. And that is how it comes to contain minerals.

p. 127. A talk by A. Bernard to the circle known as *Le Scarabée*, on how to obtain good results in dowsing, is reproduced.

V.D.W.

RIVISTA ITALIANA

No. 3. SEPTEMBER, OCTOBER, NOVEMBER, DECEMBER.

The editorial by Dr. Vinci gives an account of researches he has made with a special pendulum, adapted to contain a series of small lumps, each screened by some particular pure colour. It is in this light only that the work is carried on. The technique was described at a recent gathering of the Cespera and is summarised in the article. The procedure is different from that in use hitherto with the coloured pendulum in ordinary light. Hence this new pendulum gives a different set of responses which, although speedy and accurate, need to be interpreted properly. It is pointed out that one has to remember the relations between colours and their complementaries. For this pendulum indicates the colours which are absorbed by the individual, not those of the vesture, the visible colours of which are those reflected or rejected. A good example is given in the case of the lady in the Plaza Hotel, whose dress was yellow and correct, but the response of the pendulum was certainly not yellow.

Mario Grazi, dealing with "Medical Radiesthesia" in a long and informative paper, brings together the methods of the osteopath and pendulist in medical work, since both require to have an extensive knowledge of the nervous system and its ramifications.

The object of the writer is to provide a complete picture—a topography of the nervous system; this he does by a large clear diagram

with dotted lines for the sympathetic, continuous ones for the vagus, and broken lines for the spinal nerves. The explanatory list which follows gives the regional nerves numbered in accordance with the corresponding vertebrae, with notes in each case on the organs and tissues served, and the symptoms registered by mal-functioning.

A new problem for official science is provided by the recent work of some scientists on the vibrant energy of light.

In one case the question was: "Is it possible for micro-organisms to pass from one world to another owing to this force?" After calculating the dimensions which a minute particle should have in order to satisfy the conditions, an affirmative answer was given. For the results were within the limits of weight and dimensions which are common to many known micro-organisms.

Two other scientists have contributed to this study by the following experiment. Air was extracted to extreme rarefaction from a bell-jar under which was a mass of dust and micro-organisms in an amphora, temporarily closed. The living entities were of the dimensions referred to above. Meanwhile the whole apparatus was flooded by a powerful luminous ray and the lid of the box was opened by a mechanical gadget. The grains of dust were seen to fall vertically, owing to the force of gravity; but the micro-organisms were deviated along other paths as if driven by some other force.

A physicist of Vienna conducted a similar experiment with very minute particles in a vacuum jar exposed to the rays of the sun. The particles began to describe regular trajectories, and this movement continued so long as the rays were not obscured, but a passing cloud arrested all movement at once. Each particle, moreover, seemed to rotate on its own axis while describing its vortical movement. This strange motion, which cannot, evidently, be due to currents of air, has not yet been correlated with any known laws of Physics.

Giovanni Morino writes on the help which Radiesthesia provided in his long and difficult prospecting for water along the line of march of the Italian Army in Africa and elsewhere.

Another writer, who has done a lot of prospecting under water, refers to many places off the coasts of France, Italy, Spain and Scotland where such work is going on; and shows how Radiesthesia can help in this difficult work. In a little bay off the Gulf of Lyons where there formerly stood on the shore a Temple of Venus, there is a vast collection of archaeological objects which formerly served in the ritual offerings to Venus. In Corsica, search is at present being resumed for "Rommel's Treasures," which are known to have been secured in four strong cases by the German general, in order to protect them from algae and mire, and then hidden in a grotto on the sea bed.

Mgr. Gentilucci adds to what has been given in previous issues on the medicinal properties of the onion and garlic. He refers to the experience of two doctors in a Bulgarian prison camp, where grave disturbances in the general health of the prisoners were eliminated when fifteen grammes of the onion were introduced into the daily

diet. He points out that those peoples who use these two herbs are notably free from tuberculosis, and from cancer, which is due to diminution in the radio-activity of the blood. Experiments have shown that the roots of these plants emit certain radiations which promote healthy cell-multiplication in the tissues of other plants growing in the soil.

The exercise in Teleradiesthesia on this occasion is for pendulists who are interested in archaeology. It resumes a problem proposed some time ago on which the progress which was being made was interrupted by the death of the chief radiesthetist, the late Professor Perati. One of the oldest archaeological objects in Rome is the Stele of the Roman Forum. A photographic reproduction is given of the four faces of the Stele, of the truncated spigola, and of the incised furrow-like markings which are supposed to represent the words of the "Law" of The Stele. The decyphering of this presents difficulties hitherto unsolved by the experts. For since the plinth on which the Stele was placed was there before the Forum itself, the question of the language employed is fraught with difficulties.

"Man and the Earth vibrate in unison" is a review of correspondence in the Italian Press on the work of two scientists, a German and an Italian, on the electric currents developed by the human brain. These are considered to be of two kinds: Alpha and Beta rays. The former are more ample and are developed more slowly than the others, giving from eight to ten vibrations per second. They are given off regularly when the body is in repose, and are related to the exchange of cellular material in the very numerous cerebral ganglions. The Beta waves, besides being shorter, are irregular. Their frequency reaches two hundred per second. They are produced by the activity of the cerebral cells when one thinks on, or wishes, or merely perceives some particular thing. By means of a suitable apparatus which amplifies and transforms the brain currents into visible oscillations, it is found that, when in a state of repose, the body emits only Alpha rays. But the slightest activity, even that caused by the light of a lamp, causes them to be replaced, for a time, by Beta rays. But this does not last long. After fifteen or twenty seconds the Alpha rays resume their activity in group after group of the cerebral cells. It has also been proved that the rest of the body vibrates in all its parts, producing ten oscillations per second. These vibrations radiate to a distance of six metres, and within this radius all objects: chair, bed, floor, table, etc., vibrate with the same rhythm. Further controls lead to the conclusion that the earth vibrates in perfect harmony with the human body. The oscillograms obtained by Rohrer are a visible, if not photographic reproduction of the Alpha and Beta rays and are already of service to medicine, since their frequency greater than the normal, or less, are related to certain maladies.

Reports are given of radiesthetic work carried on by groups working in Italy, France, Germany, Belgium, England and America. Also reviews of journals including *Radio-Perception* of June and September, 1952, *Atlantis*, and *Radiesthesia No. IV*. The third lesson in Physical Radiesthesia, translated from Charlotiaux's work deals with the Divining Rod. Number 14 of the *Cespera* Bulletins gives an account of the meetings and research work of this body of experts.

B.C.

BOOKS AND APPLIANCES

Particulars regarding the Infra Red Radiation lamp (price £45) referred to on page 89, specifically tuned for the treatment of Fibrositis, can be obtained from Delawarr Laboratories, Oxford.

* * * *

The *Aura Biometer*, complete with probe, pendulum and handbook, is available for the sum of five guineas, and a cheaper model with a steel strip, instead of one of chromium plated brass, for three guineas, both inclusive of postage in the United Kingdom.

The above have been designed and produced by W. E. Benham, D.Sc., F.Inst.P., in conjunction with John Williamson, Esq., F.S.M., Assoc. Brit. I.R.E., Archers Court, Stonestile Lane, Hastings, Sussex.

The handbook and pendulum can be obtained separately for 5/- each, post 3d. *Aura Goggles* are obtainable from the same source at one guinea, including postage and packing, in the United Kingdom.

Applicants for above should state whether they are members of the B.S.D.

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* * * *

Copies of *Elementary Radiesthesia*, 33, and hand-turned wooden pendulums, 3 6, can be obtained from F. A. Archdale, 3 Wayside Road, Southbourne, Bournemouth. Also the *Pendulum*, a monthly review of Radiesthesia, subscription rate 25/- per annum at home, 26/- abroad, and \$3.80 for North America.

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* * * *

The "Link" divining rod described by Mr. Guy Underwood in his article on Spirals and Stonehenge (*B.S.D.J.* 62, Dec., 1948) can be obtained from him at Belcombe House, Bradford-on-Avon, Wilts., price 8/- post free in U.K. Reprints of this article are available at 2/- each. Reprints of 10 Essays and Lecture, 15/- the set.

* * * *

"Rules" of Radiesthesia; Turenne's guaranteed indicating Witnesses, his Radium Ionic Health Broadcasting Unit, Earth Ray Protection Tubes, and his various self-acting health-producing Catalyzers; and also appliances of Chouteau, Enel and other inventors are imported by A.A.P. Studies (Mr. Noel Macbeth), Fivehouses, Stock, Essex.

* * * *

Copies of *Dowsing* by Pierre Béasse can be purchased from the Markham House Press Ltd., 31 King's Road, S.W.3, for 13/- post free. The Schumfell radio-magnetic detector described in the book can be purchased by members from the author, 37 Rue Rossini, Nice, A.M., France.

* * * *

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